THE ATHENÆUM

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For the convenience of Subscribers residing in remote places, the weekly numbers are reissued in Monthly Parts, stitched in a wrapper, and forwarded with the Magazines.—Subscriptions for the Stamped Edition for the Continent, for not less than Three Months, and in advance, are received by M. BAUDRY, 3, Quai Malaquais, Paris, or at the Publishing Office, 14, Wellington-street North, Strand, London. For France and other Countries not requiring the postage to be paid in London, 28fr. or 1l. 2s. the year. To other Countries, the postage in addition.

[JAMES HOLMES, TOOK'S COURT, CHANCERY LANE.]

UNIVERSITY COLLEGE, LONDON.—FACULTY of ARTS and LAWS.—Session 1846-47.—The SESSION will COMMENCE on WEDNESDAY, October 14th, when Professor THOMAS TAYLOR, M.A., Fellow of Trinity College, Cambridge, will deliver an INTRODUCTORY LECTURE, at 3 o'clock precisely.

CLASSES.

LATIN—Professor Newman.
GREEK—Professor Malden, A.M.
HEBREW—Teacher, The Rev. D. W. Marks.
ORIENTAL LANGUAGES—Professor Falconer, A.M.
ENGLISH LANGUAGE and LITERATURE—Professor Tom Taylor, A.M.
FRENCH LANGUAGE and LITERATURE—Professor Merlet.
ITALIAN LANGUAGE and LITERATURE—Professor Pepoli.
GERMAN LANGUAGE—Teacher, Mr. Wittich.
COMPARATIVE GRAMMAR—Professor Key, A.M.
MATHEMATICS—Professor De Morgan.
NATURAL PHILOSOPHY and ASTRONOMY—Professor Potter, A.M.
CHEMISTRY—Professor Graham.
PRACTICAL CHEMISTRY—Professor Fownes.
CIVIL ENGINEERING—Professor Harman Lewis, A.M.
ARCHITECTURE—Professor Donaldson, M.I.B.A.
GEOLOGY—Lecturer, Mr. Joyce, F.G.S.
DRAWING—Teacher, Mr. Moore.
BOTANY—Professor Lindley, Ph. D.
ZOOLOGY (Recent and Fossil)—Professor Grant, M.D.
PHILOSOPHY of MIND and LOGIC—Professor the Rev. J. Hoppus, Ph. D.
ANCIENT and MODERN HISTORY—Professor Creasy, A.M.
LAW—Professor Marshman, A.M.
JURISPRUDENCE—Professor Hargreave, B.L.
SCHOOLMASTERS' CLASSES—Professors Newman, Malden, De Morgan, and Potter.

RESIDENCE OF STUDENTS.—Several of the Professors, and some of the Masters of the Junior School, receive Students to reside with them, and in the office of the College there is kept a register of parties unconnected with the College who receive boarders into their families. The register will afford information as to terms and other particulars.

FLAXERT SCHOLARSHIPS of 45l. per annum will be awarded in the session 1846-47, to the best proficients as follows:—A Scholarship tenable for four years, in Mathematics and Natural Philosophy; an Extraordinary Scholarship, tenable for three years, in Classics. A Scholarship will be awarded in January 1848 for Classics, and in January 1849 for Mathematics.

Prospectuses and further particulars may be obtained at the office of the College.

HENRY MALDEN, A.M., Dean of the Faculty.
CHAS. C. ATKINSON, Secretary to the Council.

August, 1846.

The Session of the Faculty of Medicine commences on the 1st of October. The Junior School opens on the 22nd of September.

UNIVERSITY OF GLASGOW — PRACTICAL CHEMISTRY.—The Laboratory, under the constant superintendence of Dr. R. D. THOMSON, will OPEN in NOVEMBER for the WINTER SESSION. Students will have an opportunity of gaining an acquaintance with the processes of Analyses and Assaying of Ores, Agricultural and Medical Analyses, and the most favourable facilities for studying Chemical Manufactures and Agricultural Chemistry.—Students have free access to the extensive private Chemical Museum, and to a Consulting Library, supplied with English and Foreign Chemical Periodicals. Fee, for Winter Session, 6l. 6s.; Sublimer Session, 3l. 3s. in Public Laboratory. Pupils are also admitted to the Private Laboratory.

ROYAL COLLEGE OF CHEMISTRY, 16, Hanover-square, London.—The Practical Course of Scientific Instruction in this Institution is under the direction of Dr. A. W. HOFMANN, assisted by Dr. JOHN B. BLYTH, and Junior Assistants.

The Third Session will commence the 1st of October, 1846, in the new Laboratory, and end on the 24th of February, 1847.

The Fee for Students working every day, is.....£12 10 } During
" Four days in the week ..... 10 0 } the
" Three days in the week ..... 8 0 } Session.
" Two days in the week ..... 6 0 }
" One day in the week ..... 4 0 }

The hours of attendance are from Nine till Five.

Gentlemen having resigned the office of Secretary, all communications, in future, are to be addressed, to Mr. William Johnson, at the Office of the College, No. 16, Hanover-square, from whom all particulars may be obtained by Students and others.

By order of the Council,
WM. JOHNSON.

GRADUATION IN ARTS AND MEDICINE.—DR. COOKE, F.L.S. Professor of Materia Medica to the Royal Medico-Botanical Society, PREPARES GENTLEMEN FOR EXAMINATION for the Degrees of M.D. and A.M. in the British and Continental Universities. Fee for preparation, 15 Guineas. Apply to Dr. Cooke, 4, Caroline-street, Bedford-square.

REMOVAL.—Dr. CULVERWELL has REMOVED to 10, ARGYLL-PLACE, REGENT-STREET.

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This Library comprises the Works of our Standard Authors, with a good supply of every New Work of interest in History, Philosophy, Travel, Biography, Science, and General Literature. Family and Country Subscription, Two, Three, Five, or Ten Guineas per Annum.

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SOCIETY OF ARTS PRIZE PATTERNS.—The Society being desirous of procuring beautiful forms of culinary utensils, to be sold at the same prices as the commonest and most vulgar, awarded their Prizes to Messrs. MINTON, of Stoke on Trent, for two Jugs and a Toilette Service, complete; and to FRAS SUMMERLY for a Tea Service.

The Tea Service may now be had of all Dealers in China and Earthenware throughout the Kingdom, at the price of the CHEAPEST and COMMONEST Crockery, and at higher prices, according to quality.

The Jugs and Toilette Service are nearly ready for delivery.

They are manufactured in white, buff, and olive-coloured Earthenware, in white China, and China with gold handles, as submitted to H.R.H. the Prince Albert, the President of the Society.

TUTOR WANTED.—Mr. GRIFFITH, Redlands, near Bristol, WANTS an EXPERIENCED TUTOR.

CHRIST'S HOSPITAL.—On Monday next, being St. Matthew's Day, the Lord Mayor, Aldermen, and Sheriffs, with the Governors of the Royal Hospitals, will attend Divine Service at Christ's Church, Newgate-street, where a SERMON will be preached by the Rev. Hugo Daniel Harpur, B.A. Fellow of Jesus College, Oxford; after which they will repair to the Great Hall of Christ's Hospital, where ORATIONS on "the benefits of the Royal Hospitals" will be delivered, according to annual custom, by the four Senior Scholars, who are about to proceed to the Universities—one in Latin, by M. Laing; one in English, by T. S. Polchampton; one in Greek, by T. J. Potter; and one in French, by E. A. Newton. Eight Poems will also be recited by others of the Senior Scholars—viz. a Latin Alcaic Ode, on 'Godfrey addressing Jerusalem,' by E. Hayman; Greek Iambics, 'A Translation from Shakspeare's Henry IV., Prince Henry's apology and the King's reply,' by J. D. Williams; a Poem on 'Egypt,' by D. W. Thompson; Latin Hexameters, 'A Translation of Adam and Eve's Morning Hymn,' by C. D. Craven; Greek Iambics, on 'The Farewell Address of Charles I. to his Children,' by C. E. Searle; Latin Elegiacs, on 'The Punjaub assailed by Alexander, and conquered by the British,' by R. Black; a Greek Sapphic Ode, 'A Translation of Gray's Ode to Adversity,' by J. L. Hammond; and an English Ode, 'On the Pictures of Her Majesty and Prince Albert being placed in the Hall of Christ's Hospital,' by W. A. Russell.

ST. BARTHOLOMEW'S HOSPITAL and MEDICAL COLLEGE.—The WINTER SESSION will commence on THURSDAY, October 1, 1846, with an INTRODUCTORY ADDRESS by Mr. PAGET, at Seven o'clock P.M.

LECTURES.

MEDICINE—G. Burrows, M.D.
SURGERY—William Lawrence, F.R.S.
DESCRIPTIVE ANATOMY—F. C. Skey, F.R.S.
PHYSIOLOGY and MORBID ANATOMY—Mr. Paget.
SUPERINTENDENCE of DISSECTIONS—Mr. M'Whinnie and Mr. Holden.
CHEMISTRY—Mr. Griffiths.
MATERIA MEDICA—G. L. Roupell, M.D. F.R.S.
MIDWIFERY, &c.—E. Rigby, M.D. F.L.S.

SUMMER SESSION, 1847, commencing May 1.

BOTANY—F. J. Farre, M.D. F.L.S.
FORENSIC MEDICINE—W. Baly, M.D.
MIDWIFERY, &c.—E. Rigby, M.D. F.L.S.
COMPARATIVE ANATOMY—Mr. M'Whinnie.
PRACTICAL CHEMISTRY and NATURAL PHILOSOPHY—Mr. Griffiths.

HOSPITAL PRACTICE.—The Hospital contains 530 beds, and relief is afforded to 48,000 patients annually. The in-patients are visited daily by the Physicians and Surgeons, and during the Summer Session four Clinical Lectures are delivered weekly—those on the medical cases by Dr. Roupell and Dr. G. Burrows; those on the surgical cases by Mr. Lawrence and Mr. Stanley. The out-patients are also daily attended by the Assistant Physician and Assistant Surgeon.

COLLEGIATE ESTABLISHMENT.—Warden, Mr. Paget.—Students can reside within the Hospital walls, subject to the rules of the collegiate system, established under the direction of the Treasurer and a Committee of the Governors of the Hospital. Some of the teachers and other gentlemen, connected with the Hospital, also receive students to reside with them.

SCHOLARSHIPS, PRIZES, &c.—At the end of the Winter Session the Annual Examination will be held for a Scholarship, of the value of 45l. a year, and tenable for three years. The Examination for the Wix, Bentley, and Collegiate Prizes, and those of all the Classes for Prizes and Certificates of Merit, will take place at the same time.

Further information may be obtained from any of the Medical or Surgical Officers or Lecturers, on application at the Anatomical Museum, or the Library of the College.

MIDDLESEX HOSPITAL SCHOOL OF MEDICINE.—The SESSION will commence on THURSDAY, October 1st, 1846, with an INTRODUCTORY LECTURE, by Dr. G. E. DAY, at Two o'clock.

SURGERY—J. M. Arnott, F.R.S., and Mr. Shaw, at 9 A.M.
PHYSIOLOGY—Erasmus Wilson, F.R.S., at 9 A.M.
MIDWIFERY—Charles West, M.D., at 10 A.M.
CHEMISTRY—Edmund Ronalds, Ph.D., at 10 A.M.
MEDICINE—Mervyn A. U. Crawford, M.D., at 11 A.M.
MATERIA MEDICA—Dr. G. E. Day, M.A. Cantab., at 11 A.M.
HOSPITAL PRACTICE—From 12 to half-past 3 P.M.
ANATOMY—Mr. Campbell de Morgan and Mr. Henry M. Rowdon at half-past 2 P.M.
PATHOLOGY—Seth Thompson, M.D., at half-past 3 P.M.
DENTAL SURGERY—Mr. Tomes, at half-past 3 P.M.
APPLICATION of SURGICAL APPARATUS, &c.—Mr. E. F. Lonsdale, at half-past 3 P.M.
PRACTICAL ANATOMY—Mr. Charles H. Moore, who will attend in the Dissecting-room for six hours daily.

SUMMER SESSION, 1847.

FORENSIC MEDICINE—Robert G. Latham, M.D.
BOTANY—Arthur Henfrey, F.L.S.
DISEASES of CHILDREN—Charles West, M.D.
APPLICATION of CHEMISTRY and the MICROSCOPE to PHYSIOLOGY and PATHOLOGY—Dr. G. E. Day.
COMPARATIVE ANATOMY—

Prizes are publicly awarded at the termination of the Winter Session.

HOSPITAL PRACTICE.

The Hospital contains 250 beds, and there were admitted during the past year, 3,321 in-patients, and 10,414 out-patients.

The Dressers are selected by the Surgeons from the Pupils without additional fee. The Senior Dressers, in turns, board and reside in the Hospital free of expense. The House-Surgeon is elected half-yearly from the Senior Dressers, and boards and resides in the Hospital free of expense.

Clinical instruction regularly given.
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Physician-Accoucheur—
Assistant-Physician—Dr. Seth Thompson.
Surgeons—Mr. Arnott, Mr. Tuson, Mr. Shaw.
Assistant-Surgeon—Mr. De Morgan.
Ophthalmic Surgery—Mr. Arnott.
Dental Surgery—Mr. Tomes.

Perpetual fee for all the Lectures, 50l.

From perpetual pupils of the School, for the Hospital attendance required by the College of Surgeons and Apothecaries' Hall, 34l. 13s.

Prospectuses and further particulars may be obtained from the Apothecary and the Secretary, at the Hospital.

THE BEDFORD HOTEL, BRIGHTON.

MR. JOSEPH ELLIS is desirous of making known that the above-named Hotel has undergone an entire repair and re-organization. In regulating it he has been guided by the experience gained in association with his Father, at the Star and Garter, Richmond Hill, and he hopes to have been so far successful as to have rendered it worthy of patronage. The Hotel not being widely nor favourably known, Mr. Ellis begs respectfully to point out some of the advantages by which it is peculiarly distinguished. Of these the leading feature is in the plan of its construction, which affords to a degree perhaps unequalled the convenience of separateness to the several Families or Gentlemen who may occupy it at the same time:—an advantage gained by means of distinct entrances, spacious vestibule, three staircases (the chief of which has two ways from every landing), width of passages, and the compact arrangement of rooms en suite. Mr. Ellis has studied to turn to the best account these capabilities for comfort, adding thereto what was wanting for completeness in several important particulars. Of the latter he may mention a Sea-water Service in the Hotel, fresh every tide, connected with the bath; and a commodious well-appointed Coffee-room. Mr. Ellis further begs to assure those who may favour him with their support, of his best attention, and of uniform moderation of charges. There are suites of apartments on the *ground floor*, and others having private entrance; also, contiguous, Billiard Rooms and a Tennis Court.

The Hotel is most eligibly situated near to and facing the sea, on the West Cliff.

SCOTTISH INSTITUTION for the EDUCATION of YOUNG LADIES, 9, MORAY-PLACE, EDINBURGH.—The THIRTEENTH SESSION of the INSTITUTION, as advertised in this Paper of the 6th June last, COMMENCES on THURSDAY, October 1, 1846.

Prospectuses, containing full information, when requested, sent *free* to any part of the Kingdom.

DRAWING CLASSES, EXETER HALL, Strand.—Mr. GANDEE, Teacher of Perspective, Drawing, &c., begs to announce that his EVENING CLASSES, for the study of Perspective, Furniture, Machinery, Landscape and Figure Drawing from Models, will be OPENED for the Winter Months on THURSDAY, October 1. Terms, 15s. for 20 Lessons.—Tickets and further particulars may be obtained at the Hall.—Schools and Private Families attended.

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EDINBURGH REVIEW, No. CLXX.—ADVERTISEMENTS for insertion in No. 170 of The Edinburgh Review, are requested to be sent to the Publishers' by Tuesday, the 29th inst.; and BILLS on or before Friday, October 2nd.

39, Paternoster-row, Sept. 19, 1846.

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Each Number will be enclosed in an Elegant Wrapper (designed by DOYLE), and the price will be Sixpence.
A Part will be published on the First of November, and on the First of every succeeding month, containing four or five Songs, price 2s. or 2s. 6d.
Instrumental and Sacred Music will also be published, but at longer intervals, and forming a separate Series.
The Work will be sold by **all Booksellers, Newsmen, and Dealers in Periodicals,** to whom orders should be immediately given.

☞ **The First Number of THE MUSIC BOOK will be published on Saturday, October 3. It will consist of a New Song by Balfe (the Composer of the 'Bohemian Girl,' &c.) entitled 'Sing, Maiden, Sing;' the Words selected (by permission) from the Works of Barry Cornwall.**

The following Songs will be published in October:—

I. SING, MAIDEN, SING. The Words by BARRY CORNWALL. The Music by M. W. BALFE.
II. THE FALSE FRIEND. Words by THOMAS HOOD. Music by VINCENT WALLACE, composer of 'Maritana,' &c.
III. THE SONG OF THE SEASONS. Words by BARRY CORNWALL. Music by J. H. TULLY.
IV. MY HOME MUST BE WHERE'ER THOU ART. Words by MARK LEMON. Music by Mrs. G. à BECKETT, composer of 'Agnes Sorel,' 'Red Riding Hood,' &c.
V. IN A DREAR-NIGHTED DECEMBER. Words by KEATS. Music by EDWARD LODER, composer of 'Nourjahad,' &c.

LONDON: Published at the Office of THE MUSIC BOOK, No. 1, ST. BRIDE'S AVENUE, FLEET STREET, (leading to St. Bride's Church), and sold by all Booksellers and Newsmen, who will regularly supply the Work, and to whom orders should be immediately given.

LONDON, SATURDAY, SEPTEMBER 19, 1846.

REVIEWS

Travels over the Table Lands and Cordilleras of Mexico, during the Years 1843 *and* 1844. By A. M. Gilliam. Philadelphia, Moore; London, Wiley & Putnam.

Recollections of Mexico. By Waddy Thompson. Wiley & Putnam.

In addition to the general fact that international relations now make the subject of Mexico peculiarly interesting,—there is another reason to justify serious consideration of the subject, arising out of the defective state of our present knowledge of both that Land and its People. The geography of the country has been almost totally neglected. Baron Humboldt, indeed, during his sojourn there, sketched a map for his own purposes; but it made no pretension to accuracy—was only such an approximation as might be attained without adequate means of observation. Mr. Gilliam's book presents us with a map, which he states to be as correct as his time and observation permitted. The book is, however, intensely American; the author not permitting himself to doubt that his countrymen were right on the Oregon question, or of the sure triumph of the United States in the now averted event of the war with England. "Great Britain will not go to war," he says;—"her Cabinet well know that in the existence of peace between their Government and the United States depends the peace of Europe and the world. Let the contest but commence, and—whatever victories may be achieved or societies devastated on either side—the annexation of all British America to the United States will be the inevitable consequence," &c. We quote this for the purpose of showing the spirit of the author,—not for the re-discussion of a political question happily settled. Mr. Gilliam is a stout democrat; and looks forward to the time when republican institutions shall prevail universally. We must bear this in mind while perusing his account of Mexico.

The author, having been commissioned by President Tyler, as Consul of the Port of San Francisco, embarked Oct. 15, 1843,—and arrived in November at New Orleans. Thence, he visited Vera Cruz. On his passage thither he had experienced the storm called "The Norther,"—the most destructive of the winds that sweep the Mexican Gulf. Arriving in port, he found the Mole, as usual, crowded with people of every clime—citizens, sailors, soldiers. The black colour of the African, the tawny complexion of the Indian, the brown of the Spaniard, and the fairer hue of other Europeans, met his eye at once; while his ear was greeted with a Babylonish confusion of languages not a little perplexing. It was difficult to distinguish the Mexican from the native of other countries, save by his uniform; the former being darkly complexioned in different degrees, and there being numbers in Mexico who are of the fine Castilian and Hidalgo blood of Old Spain. The darkest-coloured portion of the population is Indian; but there are many descendants of Europeans and North-Americans exhibiting various shades of the same hue from admixture with the Indian blood. It requires a nice eye to discriminate the consequent differences. There is not the same variety in their dwellings:—

"When you have seen one house in Vera Cruz you have seen them all, for there is a perfect sameness in their architecture. The houses are built of stone or brick, and stuccoed on the outside, which is whitewashed or painted. Each building being of a square form, has its paved or flagged court within, and a flight of steps conducts you to the corridor of each story; the corridors extending around the building, as often as there are stairs, are broad and paved with either brick or tile, and strongly cemented together. The doors of the rooms all open to the corridors, and the floors of the rooms are also of tile, and with very few exceptions of Mosaic marble. The floors, by the most tastefully cultivated people, are either painted or covered with oi-lcloth or carpets. It is but seldom that windows are seen in the first stories of buildings; and when perceived they are strongly barred with iron grating. There are no windows to the outer walls of the upper stories, excepting those fronting the streets; the greater number of windows to the buildings are from the inner walls, looking out upon the corridors. Generally, to each door and window fronting the street, there is a short jutting platform, railed and barred with iron, upon which the inhabitants can sit or stand for observation or airing; and often have I been reminded, when observing the inhabitants seated on these platforms, in their silent, demure and solemn gravity, looking in a most careless and spiritless manner, upon all that might be transpiring around them, of a Beaver Village, where here and there some dark, grave beaver of fine fur would be sunning in his window, not knowing that happiness or misery dwelt in the breasts of any other creature but itself, and when satiated with looking and sunning, dive back again into his strong hole. The houses of the city, without exception, are flat-roofed; the roofs being covered with tile or brick, and strongly cemented, and thus rendered fire and water proof; however, fire is the least of all the dangers that a Mexican anticipates to befall his house, for it is universally without a chimney. On the tops of the buildings are built observatories, which at a distance improve the view of the town. In front of the Casa de la Diligencia, is a Plaza, or public square, of about two acres of ground, and directly opposite the Casa de la Diligencia is what was once the Palace Royal, but now a barrack and a prison. The public buildings, and especially the churches, are of stupendous dimensions and magnificently finished within."

Vera Cruz is a very unhealthy place:—one-fifth of the inhabitants, according to Mr. Gilliam, perish annually. "From June until October," says he, "the Mexican vomito has a reign of terror: carrying to the tomb the old and young—and but seldom sparing the foreigner." The population is now not more than four thousand,—once it was twenty-five. We shall have reason, hereafter, to doubt the author's evidence on this head.

Having left Vera Cruz, our traveller passed, along the road anciently travelled by Cortez, in a diligencia, to La Puente del Rey;—where he describes the scenery as romantic and sublime, but desolate. As he proceeded, the whole region of country exhibited itself as volcanic. At the end of his first day's journey, he arrived at the beautiful and agreeable town called Jalapa,—from which the far from beautiful and agreeable drug derives its name. For a long period after the Conquest, this vegetable medicine was brought into the market by the Indians from the mountains; where the snakes were so numerous and dangerous that the white man never had the temerity to adventure for it. The ladies of Jalapa, we are told, are especially beautiful; but they must not be permitted to detain us from the city of Mexico—whither we are hastening. The panoramic view of mountains, churches, houses, donkeys, and people—to enumerate them in the order chosen by our author—which surrounds this city, is much more intelligently delineated by Mr. Thompson than by Mr. Gilliam;—the inflation of the latter's style making his descriptions ineligible for extract. He declares himself to have been much annoyed by the constant ringing of church bells, and the religious processions which impeded his way in the streets;—to say nothing of the beggars, who were to be found everywhere and on every occasion. Moreover,—

"A person walking the streets of Mexico finds that he must frequently step aside to permit the water-carriers, and other day labourers of the class of lazarones, to pass and repass, or else come in contact with them, as, from the inclined position of their heads, they cannot see before them. And I hope I may not be disbelieved, by those who have never witnessed the feats of strength of a lazarone man, carrying as much weight on his back and head as almost any of the mules of the country, at least their burthens to me seemed to be equal in bulk to the heaviest articles transported by such animals."

The cathedral, the theatre, and the Plaza de los Toros, furnished each its quota of instruction or amusement to our author; but we are better pleased with the account of his visit to the College of Mines. Take his description of the view from the Observatory:—

"In the first apartment of this there is a spacious room, containing two large telescopes, besides a variety of other astronomical instruments for observations. From that room we ascended up to the Observatory proper, and it was with a degree of pleasure and pride that my footsteps were planted upon the same platform where Baron Humboldt stood, when taking his astronomical observations of Mexico. Like him I comprehended in the same view the two high volcanic peaks of Popocatepetl and Irtacuhuatl, lifting their gray heads to heaven; while the distant Orizava, mantled with snow, and resplendent with a halo of light crowning its lofty summit was seen, and then the nearer prospect of porphyritic rock mountains, stretching their natural defences around the lovely plain of Mexico: while in perspective the distant lakes stretched their arms like seas, as the havens of Montezuma's city. The temple of Guadaloupe looked like a splendid monument at the foot of the mountain, and the puebla of Tacaba appeared to be only the country residence of a prince. The broad city of Mexico was spread at my feet. The golden sun of the National Palace dazzled before my eyes, as also the bright porcelain domes of the churches. I had then, for the first time, an opportunity of beholding distinctly the flower-gardens upon the flat roofs of the houses, the sight of which was a lovely one for the admirers of both vine and blossom. While standing upon this most elevated place, above all the other edifices, I was reminded of Cortes, when he was taken by the hand, and led by Montezuma to the top of the temple of Teocalli, where was pointed out to the conqueror the locations of the place, and, in the language of Mr. Prescott, 'below them lay the city, spread out like a map, with its streets and canals intersecting each other at right angles, its terraced roofs blooming like so many parterres of flowers. Every place seemed alive with business and bustle—canoes were glancing up and down the canals—the streets were crowded with people, in their gay picturesque costumes—while from the market-place, which they had so lately left, a confused hum of many sounds and voices rose up in the air.'"

The Mexican is amiable and polite,—but under a smooth exterior sometimes hides the darkest designs. He is grave in deportment; but such gravity is attributed by some to his being accustomed to the sight of human sacrifices—by others, to a tropical climate, which naturally produces languor and seriousness of manner. The Mexicans are easy to govern,—a trait frequently taken advantage of by Santa Anna. On one occasion, being informed that the issue of copper coin was too abundant, the president issued a decree calling into the mints all of that currency. The holders immediately complied; and received in return, not cash, but Government scrip. The copper coin thus surrendered amounted to two millions of dollars;—the amount of which the holders of the scrip, however, will probably never receive.—But, as we have said, we must be on our guard against Mr. Gilliam; for, notwithstanding his disclaimer, the moral and political character of the Mexican people might easily have a more zealous advocate, if not a juster censor. Of their "faith-

lessness and dishonour," he speaks in so many terms; while the facts which he relates prove only their kindness and probity to himself.

On other points the author's notions are very absurd. His portraiture of John Bull in Mexico is an outrageous caricature,—ill conceived and worse executed. To examine his arguments for the annexation of Texas and the possession of Oregon, were idle;—to expose the bombast of his style, only too easy. Besides, religious phraseology mingles with it in a way equally presumptuous, profane and ignorant.—It is time, however, to turn to Mr. Thompson's volume; which is not only marked with more of good sense, but is, besides, of an official character.—Mr. Gilliam's further includes a description of California, with its principal cities and mining districts,—and biographies of Iturbide and Santa Anna.

Mr. Waddy Thompson was the late Envoy Extraordinary and Minister Plenipotentiary of the United States at Mexico; and experiencing, on undertaking his mission, the want of some work which should give an "idea of the society, manners and customs of that unique, and, in a great degree, primitive, people," has, in the volume before us, contributed the result of his own observations towards its supply. Mr. Thompson expresses much dissatisfaction at the state of the Catholic religion there. "There is," he says, "something very striking in the pomp and pageantry of the Catholic ritual as it exists in Mexico,—and something equally revolting in its disgusting mummeries and impostures, which degrade the Christian religion into an absurd, ridiculous and venal superstition." But the writer confesses that he has not visited any other Catholic country. He, also, bears testimony to the kindness with which he was personally treated by people of all classes in Mexico,—from the lepero in the streets up to the president; yet, nevertheless, shows a disposition to censure, even while repudiating the possible charge that he may have "set down aught in malice." All this, however, is the vice of American authorship,—a national defect, from which individuals will almost necessarily be slow in effecting their own emancipation.

We have said that Mr. Thompson is an intelligent traveller. According to him, the vomito at Vera Cruz affects only the stranger. "There is," he tells us, "no instance of a person born in Vera Cruz haxing been attacked by this disease,—even though carried away in early infancy, and not returning until fully grown":—

"I have heard statements made upon this subject *much stranger even than this*. It is not regarded there as by any means the most dangerous type of fever. Eminent physicians have even told me that of all the forms of fever, they regarded it as the most manageable and least dangerous, if medical aid is called for in due time. According to the estimates of those most entitled to confidence, less than five per cent. of those attacked die. This estimate does not include the patients in the hospitals, for the reason that the general terror of being sent to the hospital is so great, that many are deterred from applying for relief until their cases are beyond the reach of remedies. Some facts came under my observation which went very far to shake my confidence —never very great—in medical theories. The universal treatment of yellow fever by the Vera Cruz physicians is very simple, and certainly not very unpleasant;—it is nothing more than cold applications to the stomach, and lime juice and sweet oil given internally; and this practice is so generally successful, as to give the result which I have stated—five per cent. of deaths. They say there that calomel is certainly fatal; but hear the other, the calomel side of the question. The prisoners of the Santa Fé expedition were released on the 16th of June, and arrived at Vera Cruz in August, where they remained more than a month; forty-five of them were attacked by the yellow fever, and in its most malignant form, as may be well supposed, from their irregular habits and the total destitution of all the comforts of a sick bed. They were attended by a young physician who belonged to the expedition, and whose practice was to give large doses of calomel—not more than one died. I am not certain that a single one died of the disease."

This is a very different account from that given above by Mr. Gilliam, and elsewhere by others. Notwithstanding his general intelligence, we find Mr. Thompson ignoring the fundamental idea of humanity by advocating slavery on the ground of the natural inferiority of the Caucasian race. It seems certain, however, that the condition of the Indian labourer in Mexico is much worse than that of the negro slave in Boston or Philadelphia:—

"The owners of the estates (haciendas) receive labourers into their service. These labourers are ignorant, destitute, half-naked Indians; certain wages are agreed upon, which the employer pays in food, raiment, and such articles as are absolutely necessary; an account is kept of all these things, and neither the labourer nor his family can ever leave the estate until all arrearages are paid. These, of course, he has no means of paying but by the proceeds of his labour, which being barely sufficient for his subsistence he never can get free; and he is not only a slave for life, but his children after him, unless the employer chooses to release him from his service, which he often finds it convenient to do when the labourer becomes old or diseased. Whatever may be the theoretical protection from corporal punishment which the law affords him, the Mexican slave is, practically, no better off in this respect than is the African slave in this country. All the labourers in Mexico are Indians; all the large proprietors Spaniards, or of mixed blood. I say all; there may be a few exceptions, but they are very few of either. So of the army; the higher officers are all white men, or of mixed blood, the soldiers all Indians."

The following contrast is suggestive:—

"Mexico was colonised just one hundred years before Massachusetts. Her first settlers were the noblest spirits of Spain in her Augustan age, the epoch of Cervantes, Cortes, Pizarro, Columbus, Gonsalvo de Cordova, Cardinal Ximenes, and the great and good Isabella. Massachusetts was settled by the poor pilgrims of Plymouth, who carried with them nothing but their own hardy virtues, and indomitable energy. Mexico, with a rich soil, and a climate adapted to the production of everything which grows out of the earth, and possessing every metal used by man—Massachusetts, with a sterile soil and ungenial climate, and no single article for exportation but ice and rock—How have these blessings, profusely given by Providence, been improved on the one hand, and obstacles overcome on the other? What is now the respective condition of the two countries? In productive industry, wide-spread diffusion of knowledge, public institutions of every kind, general happiness, and continually increasing prosperity; in letters, arts, morals, religion; in everything which makes a people great, there is not in the world, and there never was in the world, such a commonwealth as Massachusetts. 'There she is! look at her'—and Mexico!"

Nor is the next statement less so:—

"I cannot forbear to mention here a matter honourable to two of my countrymen. When the prisoners of the Texan Santa Fé expedition were liberated by General Santa Anna, in June 1842, they were furnished with as much money as was supposed to be necessary to take them home. But being unable to procure a vessel, and consequently detained some time at Vera Cruz, they were without money or credit, and in the midst of disease and death. Mr. L. S. Hargoos, an American merchant, with a liberality and humanity of which few men would have been capable in like circumstances, advanced them between ten and fifteen thousand dollars. Some time afterwards, he travelled to Mexico in the stage, and rode outside with the driver, Nathan Gilland, a native of New York. Gilland asked him if it was true that he had advanced so large a sum to the Texans as he had heard. Mr. Hargoos told him that it was. The next morning, about the time the stages were starting from Perote, the one returning to Jalapa, the other going to Mexico, Gilland took Mr. Hargoos aside and said to him, 'Sir, I do not think it right that you should suffer all the loss by the Texans —you knew none of them, and only relieved them because they were Americans; now, I think it nothing but fair that all the Americans in Mexico should share the loss, and here are two hundred dollars which I am willing to give for my part of it. 'Very well, Nathan,' said Mr. Hargoos, 'if I should ever stand in need of two hundred dollars, I will certainly call upon you.' Foreigners ridicule the indiscriminate use which we make of the term gentleman, and its application to stage drivers and persons in similar stations in life:—may it never be more abused than by its application to one capable of thus feeling and acting! It would be unjust to the other American drivers on the same line not to say that I do not doubt that every one of them would have done the same thing; I do not believe that anyone of them gave a less sum than five hundred dollars, and some of them twice that sum to the Texan prisoners during their confinement in Mexico."

We have our prejudices as well as the Americans; such facts may serve to correct ours,—as more experience, doubtless, will theirs, until we both become more rationally cosmopolite than now we are. The time is apparently hastening when the whole world will become better acquainted, and the most distant countries unite and sympathize in a common progress. One of the last in the Old World to do this, it may be feared, is Spain,—in the New, Mexico. It is, if true, remarkable, as Mr. Thompson says, that "there is not in the world such a thing as a railroad in any country where the Spanish language is spoken, with the exception of a short one in Cuba; which owes its existence to American enterprise."

One cause of the frequent robberies in Mexico is the national foible of gambling. Men go to the monte tables with thousands, and leave them pennyless;—they then take to the road. Hence, some of the stories about robberies in Mexico are, says Mr. Thompson, of thrilling interest and exceedingly romantic. Here is one:—

"The Swiss consul resided in the street of St. Cosme. About twelve or one o'clock in the daytime, a carriage drove up to his door, and three men got out, one in the dress of a priest; they were admitted by the porter, and the door closed, when they immediately seized and gagged him, went into the house, and robbed and murdered the consul. The only clue for the discovery of the murderers was a metal button with a small piece of blue cloth attached to it, which was found clenched in the fingers of the murdered man, and which he had torn from the coat of one of the robbers. Suspicion at last rested upon a soldier who was seen with more money than he could account for. His quarters were searched, and the coat from which the button had been torn was found there. He was convicted, but he relied with the utmost confidence upon a pardon, as Colonel Yanes, the favourite aide-de-camp of President Santa Anna, was his accomplice. He was brought out to be executed, and had actually taken his seat upon the fatal bench, with the collar placed around his neck, and the crank about to be turned, when he said—'Hold! I will disclose who are my accomplices—Colonel Yanes is the chief!' The execution was suspended, and on searching the house of Yanes, a correspondence in cipher was discovered which fully established his guilt in this and in other robberies. Yanes was the paramour of a woman in Mexico very nearly related to one whose word was law, and whose influence over her relative was known to be very great, and upon that reliance was placed for a pardon, at least; but she was not disposed to trust to that, and let her lover suffer the disgrace of conviction—she went to the judge with whom the cipher had been deposited, which furnished the evidence of the guilt of Yanes, and offered him a large bribe to give it up. He was an honest man and an upright judge; he sternly refused the bribe, and firmly resisted the menaces of this powerful woman. In a day or two he died suddenly, as all supposed, of poison. A successor was appointed of principles less stern, who

accepted the bribe, and promised to destroy the paper; but when, in confession to his priest, he disclosed his corrupt conduct, the worthy man prevailed upon him, if he had not destroyed the paper, not to do so, and he did not. Yanes, in the meantime, was informed that this evidence would not be produced against him, and that the prosecution would rest entirely upon the testimony of his accomplice. Upon the trial, with the habitual air of command of an officer, and the habitual fear and submission of the common soldier, Yanes browbeat and confused his accuser to such a degree, that he felt sure of an acquittal. At this moment the fatal paper was produced, and he was condemned and executed. His not less guilty paramour still resides in the city of Mexico."

Mr. Thompson is no believer in the sincerity of the Mexican clergy, or in their learning. The lower orders of the priests and friars he describes as generally uneducated and licentious; but he bears witness, notwithstanding, to some high examples of virtue and self-sacrifice.—From the church to the theatre, in a Catholic country, is but a step. In 1843, a new theatre was built in the Street Bergard,—which is said to equal that of San Carlo, at Naples. It will hold more than eight thousand persons. The theatre in Mexico is not an occasional recreation, but a part of the business of life. A mother of eight or ten children was asked by our author if she went thither every night? "Oh, yes, sir," she replied, "how else could I possibly get through the evenings?"—The people are far from being uneducated. General Tornel has established Lancasterian schools all over the country:—owing to which, Mr. Thompson confesses that he had not a servant during his residence in Mexico who did not read and write; and that he had often observed the most ragged leperos, as they walked down the streets, reading the signs over the store doors. Equally creditable to the Mexican character are the free institutions which they have lately formed. But the spirit of liberty among the people is wanting, it is said, to support and realize them. This may be true; but it must at the same time be recollected that we receive the report from their competitors. The spirit of liberty is itself creative; and can scarcely exist and operate for any length of time without exciting a beneficial reaction in the national mind.

The Ship of Glass; or, the Mysterious Island. A Romance. By Hargrave Jennings. 3 vols. Newby.

Notwithstanding the unity of the title-page, we have here two stories; 'The Ship of Glass' being neither so long nor so readable as that which follows it—'Atcherley.' The only quality in which the former can be said to reach even mediocrity is invention;—but this is of a character at once so wild, affected, and often puerile, that it fails to arrest attention. The events of the tale not only bid defiance to possibility, but are incongruous with themselves; and the language is affected and jejune. In the wildest excursions of imagination, the disciplined mind is guided by laws as certain and immutable as those which preside over the course of actual existence. The mental sympathies are not to be touched at the bidding of any writer who is ignorant of, or disregards, the laws that govern universal being. To connect the supernatural with the passions and judgment of mankind, so as to influence these in any sensible degree, is a difficult problem, to be solved only by the genius that is under the direction of knowledge and sobered by experience. To such Mr. Jennings has, on the evidence of these volumes, no claim. Wildness he mistakes for genius,—and the grotesque for the impressive; and so that he leave the real world behind him, cares little how monstrous are the forms with which he surrounds himself.

'Atcherley,' as we have said, is just readable—something better than 'The Ship of Glass.' It relates to a well-known period of English history,—that of the Rye-House Plot. It is, thus, conversant with real events,—and, to a certain extent, with real characters. Yet here, again, the author's preference for the extravagant leads him into strange positions. Of his characters it may be said, that all are unfinished, and few have even a well-defined outline. The events, for the most part, are improbable in themselves, and have no necessary connexion with the catastrophe. They have neither the verisimilitude necessary to create an illusion, nor any artistic congruity with the manners of the age. Yet, with all these defects, 'Atcherley' will be read by one—and that by no means a small—class of the community,—the young, the inexperienced, and generally the devourers of such fare as our circulating libraries commonly afford. The author has fancy, however ill-regulated,—and occasionally descriptive power, however misapplied.

From the great historical event which the incidents of 'Atcherley' are made to subserve, the reader will be prepared for secret plottings and meetings not likely to be interrupted by the emissaries of the ruling powers. Even here, however, the author indulges in unnecessary mystery,—mystery more befitting the Vehmic tribunals of the fourteenth century than English life of the seventeenth. To illustrate our meaning, no less than to justify our general strictures, we will give an extract or two relating to a conspiracy hatched in an old monastic ruin in Derbyshire,—though we are at a loss to discern what necessary connexion it has with the principal events of the history. The very opening is quite German,—and deeply tinged with the hues of the Radcliffe school:—

"The scene is a wild and tangled wood, gloomy in its character and extensive in its dimensions. A rough cart track, by means of which woodcutters may have been able to convey their loads, too rough for the passage of any vehicle less coarse and inartificial than a lumbering cart, and in so very bad a state that the most cautious steed could scarcely gain a firm footing, wound deviously through the clumps of trees, and made such sudden turns that it was evident the road had been made subservient to the obstacles it encountered, rather than that the obstacles had been removed to make way for the road. Masses of leaves fringed it on either side, and threw a melancholy shade over the passage. In some places, where the breaking away of the thickets did not arbitrarily confine the view to the foreground, glimpses of the more distant woodland could be obtained, rich in all the varieties of colour and shadow, and full of those inequalities which give so great a charm to scenery of that character. The light was also advantageous for the display of its grandeur. Though the moon—a summer moon whose light was undimmed by vapour—was not high, it shed sufficient light to reveal the character of the neighbouring objects, and threw over the remoter landscape that soft and placid blue which blends all objects in its own rich illumination. No sound was to be heard in this beautiful solitude except the faint sweep of the murmuring breeze as it drowsily agitated the leaves, and the successive tramp, tramp of approaching hoofs. The last sounds were caused by the approach of a black steed, whose (to judge from his movements and the way in which he sat the animal) graceful rider was enveloped in the folds of a dark and voluminous mantle. His beaver was drawn over his eyes, and he wore a mask. Great part of his horse's body was also covered with his mantle; which was so carefully drawn round him that concealment would have seemed to be the object of the wearer. Emerging from some of the most close and difficult part of the ground, the horseman increased his pace and seemed anxious to get clear of the wood;—at least a little free of those thick portions of it which obstructed his advance He seemed successful in his wish, for the wood-tract now appeared partially to open. A few minutes' farther ride brought him to a descent, and to that corner of the wood which had been noticed by Sir Reginald in his description of his night's adventure, and which commanded a full view of the old monastic ruin. The moonlight now was less interrupted, and displayed the features of the scene with a distinctness which perhaps was not altogether agreeable to the horseman. At all events his first impulse was to peer suspiciously around, and then to fix his gaze upon the building before him."

Again, (and the continuation is a fit one):—

"The ancient building which formed so prominent a feature in the view, was apparently erected upon an assemblage of rocks, tumbled together in confusion, and crowned with massy and in some places pendant foliage. To the left, the ground on which it had been erected was exceedingly precipitous; but on the other side it was moderate in its descent, and surmountable without any difficulty except from that presented by the underwood. The ruins—covered with lichens, and a thick ivy that not content with scaling the side of the building by means of dilapidated buttress or mossy cornice, twined its dark and clustering leaves into the broken windows and luxuriated upon their half-shattered and corroded tracery—the ruins were oblong in their form, and contained within their area a desolate court-yard, in which weeds had grown to a height unusual even in such abandoned situations, and around which the ruined, high-pointed arches, wreathed and festooned with a profusion of creepers, had fallen stone by stone, till the fragments of rotting, mossy and roughly chiselled masonry had risen into heaps. The mouldering column-shaft was here garlanded with the freshest production of nature; the enriched window-head, which had formerly admitted the bright light, was now blocked up by an increasing vegetation; the aisles, which in their lonely grandeur still bore witness to the ancient glories of the edifice, instead of as in the past time echoing the voice of prayer or thanksgiving, answered only to the moody hooting of the owl, or the midnight bay of the grim prowling wolf, who trod over lettered stones and looked through frameless windows; and the shadowy cloisters, which had only suddenly returned the cautious tread of the bare-footed religious as he dimly flitted along them, now lay in voiceless and slowly falling desolation. A few years longer and the last melancholy remains of the building would crumble to the earth over the graves of those whom it had so long and yet so ineffectually held over."

All this time, and much longer, (for we are compelled to pass over the greater part of the description,) we are detained in the very vestibule of the adventure; and so is the mysterious horseman, anxious as we must suppose him to join the equally mysterious conspirators below. At length, however, he dismounts, passes through aisles and courts and cloisters innumerable—traverses the chapel of the monastery, descends into the vaults beneath, and proceeds:—

"The stranger might justly have been expected to display some marked symptom of discomposure when as his footsteps rang along the heavy wall and died away in long-protracted echoes among the branching passages and hollow chambers, the gleam of a light was momentarily to be seen shooting athwart the gloom in the distance: but he seemed to pay little or no attention to what might have been considered so extraordinary an appearance, and kept on his way without pausing. On first observing the light he did indeed advance the lantern he carried in his hand as if to render his approach still more obvious; but it was not difficult to perceive his object in so doing was solely to announce himself by giving some sort of signal. He had apparently satisfied the person who seemed to await him of his character, for the light was now fully displayed. On a nearer approach, a masked figure was discoverable in a nook of the wall. His vestments were concealed in a mantle of similar volume to that of the stranger. A cap was upon his head, and a drawn sword in his hand. The traveller paused on receiving the challenge of this vigilant sentinel. It was in a foreign language, and the

answer that was immediately given seemed satisfactory."

All this is Vehmic enough; but it is far transcended by what follows:—

"The apartment into which Atcherley was admitted, as well as extensive was of very lofty dimensions. It communicated directly, through a pair of magnificent iron gates, with the ancient Crypt that ran under the Chapel. These gates, now half falling not only from their hinges but from the stone-work in which the latter had been fixed, were massy in construction, though their strength was now hopelessly impaired by the rust of ages, and were approached by five broad steps of a dark marble. The walls were formed of heavy masonry, out of the joints of which the iron clamps had nearly worked. On one side was a richly pierced Gothic screen, the tracery of which was a masterpiece of art, though the hue of the once even coloured stone was darkened, and its luxuriant details were in some places mutilated and in others deeply time-worn. Through the mullions and their intermediate decorative ramifications, glimpses could be obtained of the space on the other side, which had been specially appropriated as the burial place of the Abbots of the Monastery, and was filled with stately table or altar monuments, the melancholy and funeral pomp of which was heightened by the image of each dignitary to the memory of whom they were raised, and which was lying at full length on the slab. The roof of the apartment was arched, and embellished with ponderous groins, ribs and knots of foliage. A row of massy columns drew out on either side, blackened by age, and lowering in sullen magnificence on the other proportions of the subterranean hall. The floor was profusely lettered; and inscriptions, nearly illegible, on wall and pillar, met the eye in whatever place it happened to rest. A few dark and waving rags, which might once have been richly emblazoned flags and banners, shook with a slow and sepulchral magnificence as the cold air found entrance, and they added to but ennobled the charnel horrors of the place. Ranged around a ponderous table of chesnut, covered with a pall of black velvet, was an assemblage of tall and silent figures, who might have been taken for statues, their faces concealed by similar masks to those of the stranger and the sentinel, and their persons studiously concealed by flowing draperies. Bonnets were on their heads, ornamented with sable plumes, and their arms were folded in their cloaks. On an elevated seat was an individual of taller and larger proportions than the rest of the conclave, but having not the smallest difference in his attire. His face, like those of the others, was hidden by a mask, and nothing was to be seen of its character except what might have been gathered from the piercing gleam which every now and then shot from his bright and rolling eyes. A mysterious silence reigned throughout the assemblage: they did not even seem to breathe; and nothing broke the complete and even painful stillness, but the long sigh of the wind as it swept through the ruinous aisles of the neighbouring Crypt and gibbered through its shivering and frameless windows. A couple of flickering torches, in stands of iron, diffused an unequal and lugubrious light through the apartment."

And the conclusion is, as it should be, quite in the way of climax:—

"The whole expression of the place was dismal and forbidding to a degree. It was totally impossible to dissociate its blending constituents; and the eye could barely do more than rest upon the all-pervading gloom and cloud-like solemnity of the whole. The red, imperfect and dusky glare of the waving torches was quite insufficient to do more than somewhat qualify the shadows that hung around, and tried in vain to penetrate beyond the narrow circle to which the jealous and seldom disturbed darkness confined it. The blue cold moonlight, streaming partially through 'the rents of ruin,' and mixing its sepulchral and deceptive glimmer with the sickly illumination thrown fitfully out by the torches, drowned every object in the nearer distance in its own ghastly twilight, and invested what it did reveal with a mystery that fascinated while it awed the beholder. The place was indeed one dedicated

To graves, to worms, and epitaphs;

the temple of one mightier than the mightiest of the earth; the glass of Death wherein its loathsome features could be thoroughly contemplated; and a living record of the vanity of the things of this world, the utter emptiness of pride, and the nothingness of existence. The ominous gloom of those subterranean halls broken upon only by a few gleams of moonshine and by torchlight; the perfect silence of the mysterious conclave assembled there, the lonely wail of the midnight wind, and the supremely desolate character of the ancient building beneath whose ruins this singular meeting was held, were calculated to strike an awe equalled only by wonder at the object of the convocation, and the characters, to judge from their appearance, of its scarcely human members."

So much for description.—The characters are mostly suited to it. Of Charles II. it has been written, in the words of the well-known epigram—

Here lies our sovereign lord the King,
Whose word no man relies on;
Who never said a foolish thing,
And never did a wise one.

This impromptu seems to have escaped Mr. Jennings;—who makes the monarch say many foolish things, and do some wise ones,—besides making him truer to his word than sober history approves. Charles, too, was not without dignity;—but in the hands of our novelist he is degraded to "one of the harlotry players."

Original Letters, illustrative of English History; including numerous Royal Letters from Autographs in the British Museum, the State Paper Office, &c. With Notes and Illustrations by Sir Henry Ellis. Third Series. Vols. III. and IV. Bentley.

The third volume of this Series commences with a letter of Richard Croke; whose diligence in bribing the friars learned in canon law, at Padua, to give their verdict in favour of Henry's divorce, has been already noticed [*ante*, p. 599]. This epistle details his unremitting exertions, in the humbler form of village preaching, in favour of the King's supremacy. He assures Cromwell that he has, upon this point, preached "*threscore* Sermons,—not failing in every on off them to speke effectually ayenste the usurped power off the Busshoppe of Rhome;" taking due care to exalt the equally usurped power of the King. He gives to the Lord Privy Seal the heads of these loyal sermons; from the "firstly showing that Petre never had no sutch thinge gyven him by God" as the supremacy,—to the sixthly, which shows "that th'especial off a bushoppe ys to preche and teche," and all "these things declared and proved by evident reason, grounded upon Scripture, and by authorite off th'auncient doctors;"—proofs, which must certainly have been thrown away upon the villagers of Norton, Starton, Hanslope, Leighton Buzzard, and such like places, "wherin," as he says, "I have prechid." But if the "uplandish folke" could not comprehend reasons from the Fathers and the nice distinctions of the schools, they could well understand the lesson of spoliation afforded them by these reverend preachers;—and, in many instances, they showed no tardiness in following so tempting an example. The subjoined extracts, from a manuscript in Cole's collection, illustrate this; and, as the editor remarks, "probably exhibit what was the genuine, as well as general, feeling of the English public at this time."

"And every person had every thing good cheap; except the poor Monks, Friars, and Nuns, that had no money to bestow of any thing: as it appeared by the suppression of an Abbey, hard by me, called the Roche Abbey; a House of White Monks: a very fair builded House, all of freestone; and every house vaulted with freestone, and covered with lead (as the Abbeys was in England, as well as the Churches be). At the breaking up whereof an Uncle of mine was present, being well acquainted with certain of the monks there; and when they were put forth of the House, one of the monks, his friend, told him that every one of the Convent had given to him his cell, wherein he lied: wherein was not any thing of price, but his bed and apparel, which was but simple and of small price; which monk willed my uncle to buy something of him; who said, I see nothing that is worth money to my use: No, said he; give me ijs. for my cell-door, which was never made with v^s. No, said my uncle, I know not what to do with it. (For he was a young man unmarried, and then neither stood in need of houses nor doors). But such persons as afterward bought their corn and hay or such like, found all the doors either open, or the locks and shackles plucked away, or the door itself taken away, went in and took what they found, filched it away. Some took the Service Books that lied in the Church, and laid them upon their waine coppes to peice the same: some took windows of the Hayleith and hid them in their hay; and likewise they did of many other things: for some pulled forth the iron hooks out of the walls that bought none, when the yeomen and gentlemen of the country had bought the timber of the Church. * * The persons that cast the lead into fodders, plucked up all the seats in the choir, wherein the monks sat when they said service; which were like to the seats in minsters, and burned them, and melted the lead therewithall: although there was wood plenty within a flight shot of them: for the Abbey stood among the woods and the rocks of stone: in which rocks was pewter vessels found that was conveyed away and there hid: so that it seemeth that every person bent himself to filch and spoil what he could: yea even such persons were content to spoil them, that seemed not two days before to allow their religion, and do great worship and reverence at their Mattins, Masses, and other service, and all other their doings. * * For the better proof of this my saying, I demanded of my father, thirty years after the Suppression, which had bought part of the timber of the Church, and all the timber in the steeple, with the bell-frame, with others his partners therein, (in the which steeple hung viiij. yea ix. bells; whereof the least but one could not be bought at this day for xx^li., which bells I did see hang there myself more than a year after the Suppression,) whether he thought well of the Religious persons and of the Religion then used? And he told me, Yea: for, said he, I did see no cause to the contrary. Well, said I, then how came it to pass you was so ready to destroy and spoil the thing that you thought well of? What should I do? said he. Might I not as well as others have some profit of the spoil of the Abbey? for I did see all would away; and therefore I did as others did."

In some few instances the countryfolk stood by the monks,—and attacked the commissioners. This was the case at Norton Abbey; where two or three hundred persons assembled, and compelled the visitors to take refuge in a tower.

Some letters from Thomas Thacker, who was steward to Cromwell, are curious; as showing that, notwithstanding his denunciations of worldly pomp and magnificence, Cromwell was a close imitator of his haughty master in the splendour of his housekeeping, and especially in his love of building. He had residences at the Rolls, and in the city, at the Augustine Friars, at Stepney, at Canonbury, at Mortlake, at Hackney,—besides one which he built at Ewhurst; and, from the details in these letters, he seems to have spared no cost in enlarging and beautifying them all. The work of spoliation turned, there is no doubt, to Cromwell's advantage. A long letter from John London, gives a detail of the writer breaking windows, and defacing ornaments in a manner which would have excited the envy of John Dowsing. Here are a portion of his deeds:—

"At Reding I dydd oonly deface the Church; all the windoes being full of Fryers; and left the rest and wallys hole to the Kings use. I solde the ornaments and the sellys in the dorter and certen utensyls wiche els wold have be stolen as dyvers wer indede. At Aylesbury, I founde them very powr and in dett. Ther ornaments wor very coursse and very litill stuff of howshold. Ther I oonly solde the glasse wyndoes and ther ornaments with ther vtensyles. I left the

Howse hole and oonly defacyd the Churche. Ther the hole churche ys well coveryd with ledd, and a guild new roff. At Bedford, I dydd sell the ornaments of ther churche and certen vtensiles. All the ledde I savyd with certen vtensyles, because I myzt leve them in saff custody with Mr. Gostwike. At Stamford, I left in the Grey Fryers all ther brewyng vessels, and ther kechyn stuff wasse so gud that I cowde gete butt viij*li*. for all. I solde ther ornaments and glasse of their church with certen stuff, and sold no glasse in the Grey, Whyte, or Blacke Fryers, saving oonly in their churches. At the Austen Fryers I sold all ther glasse, for els all wold have be stollyd, ffor it stondeth owt of the town. In thre Fryers ther I sold ther brewyng vessels wich wer very my worn. In Coventry, I dydd partly rase that Howse of the Gray Fryers, thou after the powr people lay so sore vpon ytt. Butt the Whyte Fryers I dydd litill vnto. At Warwick, the Fryers Howse ys withowt the town, an olde ruynose howse and no ledd butt gutters and the coueryng of the steple. Ther I defacyd the churche wyndoes and the sellys of the dorter as I dydd in euery place saving in Bedford and Aylisbury wher were few byars. I pullyd down no Howse thorowly at noon of the Fryers: butt so defacyd them as they shuld nott lyztly be made Fryerys agen."

In 1536 the Lord Thomas Howard was sent to the Tower for making a private contract of marriage with the Lady Margaret Douglas, King Henry's niece,—and, subsequently, the mother of Lord Darnley. Here he remained till his death, in November 1537; when the Lady Margaret, who had also been confined there, was released. The following letter was written by the poor girl on this occasion. Her wish to keep the two servants who had belonged to Lord Thomas, affords proof of the interest with which she regarded his memory, although forced to disclaim it so solemnly:—

"And my Lord, wher as yt ys informyd you that I do charge the howse with agreter nomber then ys conuenyent, I assuer you I have but ij. mo then I had in the Court, wych in ded wer my Lord Thomas seruands: and the cavse that I tok them for, was ffor the poverty that I saw them in, and ffor no cause els. Bvt seyng, my Lord, that yt ys your plesuer that I shall kepe non that ded be long vnto my Lord Thomas, I wyll put them fro me. And I be seche you not to thynk that eny fancy doth remayn in me towchyng hym; but that all my study and car ys how to plese the Kyngs Grace and to contynv in hys fauer. And my Lord, wher yt ys your plesuer that I shall kepe but a ffew here with me, I trust ye wyll think that I can hawe no fewer than I hawe: ffor I have but a gentyllman and a grom that keps my aparell, and a nother that keps my chamber, and a chaplean that was with me always in the Court. Now my Lord, I be seche you that I may know your plesur yff you wold that I shuld kep any ffewer. Howbed, my Lord, my sarvents hath put the howse to small charg, for they hawe nothyng but the reversyon of my bowrd; nor I do call ffor nothyng but that that ys gyven me; howbed I am very well intreted. And my Lord, as for resort, I promes you I have none, except yt be gentylwemen that comes to se me, nor never had sens I cam hether; for yff eny resort of men had com yt shold nother abecum me to a sen them, nor yet to haue kept them company, beyng a mayd as I am. Now my Lord, I besech you to be so good as to get my power ssarvends ther wages; and thyf I pray owr Lord to preserve you both solle and body,

"by her that has her trust in you,
"MARGRET DOWGLAS."

Much surprise has often been expressed at the enormous quantity of food, and especially the enormous allowance of ale, which was assigned to the various ladies in the court of Queen Elizabeth; and much merriment has been excited at the idea of the fair maid of honour with her breakfast fit for two ploughmen. Now, from this letter, it appears that the only provision for the diet of a court lady's attendant was, "the reversyon of her bowrd,"—and doubtless it was with a view to this that each lady's allowance was so large.

While the King's subordinates were obtaining so many fair manors from the spoils of the church, the monarch seems to have thought of a new palace and park on the site of the stately abbey of Abingdon. A letter from Richard Ryche, alluding to this project, cautiously points out the disadvantages of the plan; and mentions the offer of one Tucker, a clothier of Burford, that, if his Grace will let to him two fulling mills now decayed, "the fflott gats, the ffyshyng, and a farme callyd the Rye, he wyll bestowe wykely duryng his lyff in wages to clothe makers in the seyd towne a C. marks sterlyng." This notice affords a favourable view of the rising prosperity of the west country clothiers. The remaining letters of Henry VIII.'s reign have little interest;—nearly all referring to the spoliation of the monasteries and the anxieties of the courtiers to obtain a portion of the spoil. Nor is there much to interest the general reader in the letters of the reign of Edward VI. or those of Mary's. Those of Elizabeth's time, too, offer little for extract. There are two curious epistles—one from Grindal, Bishop of London, and the other from Horne, Bishop of Winchester,—deprecating the guardianship of Leslie, Bishop of Ross, the celebrated advocate of Mary, Queen of Scots. Grindal prays, "moste instantlye that I be nott trobled with the Bishoppe of Rosse; he is a man of suche qualities as I lyke nothynge att all": and Horne, who seems to have had him for a guest, assures Burghley that grief has compelled him to be a more importunate suitor, than even the woman of Canaan, "for my deliuerie from soche a devellishe sprite as my house is possest withall. I pray your Honor therfor help me, that this deville were ridde out of my house."—A long letter from Robert Beale, who was sent with the warrant for Mary's execution, affords the following corroboration of the fact that Elizabeth's ministers—and there is little doubt, we think, herself, also—intended it:—

"Further, besides my ordinarye service, I was by your Lordship and the rest thought a meate man, to carrye downe the Commission for the execucion of the late Scotishe Queene. I receaved it at your Lordships hands, in the presence of divers othir Counsellors: and I performed, in regarde of her Majesties safetie, that which was committed unto me, and Mr. Davison. And the Lord knowethe that calling to remembraunce former examples, *I at that time moved suche a doubte to Sr. Christopher Hatton then vicechamberlayne, whether Her Majestie were resolved therin or no, who aunswered me, that I neaded not to doubte therof, seinge I had her Majesties hande and the Greate Seale.* I did nothing but as I was commaunded, and can make good proofe therof for my defence, And I take it I did a good peece of service. But what gott I by it? As much displeasure at home as anie of the rest, and abroade *diffamed with carryinge downe the hangeman;* and my self and posteritie threatned with all revenge. Some will perhappes saye this is my conceipte, and no matter of moment. Suerlye I would lesse esteeme the loss of all my Offices in Englande, which are so much gaped at, if I could therby wype out that malitious brande of slaunder. For ever sythe, I have loste all my credit and reputacion abroade."

From the letters of King James's reign we extract the following;—which is interesting for its remarkably easy style, as well as for the kindly feeling which it displays. It was addressed by the Princess Palatine, afterwards Queen of Bohemia, to Sir Julius Cæsar, and is entirely in the writer's own hand:—

"Good Sir Julius Cæsar, I have a requeast vnto you in the behalfe of one of my seruants, her name is Sandill, whome I employ about my litle sonne, and have found her cairfull and dilligent attendance such as I must acknowledge. She hath a yong sonne in England, to whom by the death of his grandfather is fallen some inheritance, which by reason of his yong yeares, and his mothers absence, is lyke to be impaired by his vnkynd vncles, who also may most probably be thought to shew a Will for their owne aduantage, and not that which was last made by the deceased. There are many reasons wherby this my seruants sonne semeth to be ill vsed, and his grandfather, to whom he is heire, dying so wealthy as I vnderstand, my thinke there is no reason but he should have better then this Will is shewed doeth afford him. I do therefore most earnestly entreat you for my sake that if the bussines doeth come before you, as you shall be informed therein by them who shal come vnto you, that this lad may have his right, and what fauour as you can afford."

A letter from Sir Edward Dering to Sir Robert Cotton, determines the question as to whence many of the beautiful Saxon charters—and especially the celebrated Magna Charta, in the British Museum—came into the hands of the latter. The story of its rescue, by Sir Robert, from the hands of a tailor, who was preparing to cut it into strips, for measures, is hereby disposed of:—

"I received your very wellcome lettre, whereby I find you abundant in courteseys of all natures. I am a greate debtor to you, and those obligacions likely still to be multiplyed; as I confesse so much to you, so I hope to wittnes itt to posterity. I have sent up two of your bookes which have much pleasured me. I have heere the Charter of King John, dated at Running meade: by the first safe and sure messenger itt is your's. So are the Saxon charters, as fast as I can coppy them; but in the meane time I will close King John in a boxe and send him."

A short letter from Laud, candidly declaring "I am about to draw up my Order for Worcester, and to settle peace betweene the Bishop, the Citty, and the Chapter, *if I can*":—and a very reverential one from Sir Symond D'Ewes to Lord Pembroke, expressing what honour and glory to the King's sacred person, the remission of all arrears of ship money would bring, succeed.—Then follows, characteristically enough, a short note from the Earl of Essex to Pym, requesting that "he may have spare arms of picks and muskets." There are, too, some curious letters of Sir Samuel Luke, extracted from his Letter-Book.

The letters relating to the battle of Naseby are interesting; but there has been of late such an extensive gleaning of documents illustrative of this period, that we can scarcely expect much that is new. The remaining letters are few in number, and of no very general interest;—if we except two or three by George III. and two from Washington. An extract from one of the latter—to the Earl of Buchan—we will give, by way of conclusion. It is an answer to one in which the Earl "laid before him," as the latter says in the minute prefixed, "the vanity and folly of indulging national pride, vanity, and resentment, to the slow but certain benefits to be permanently obtained by peace and internal prosperity":—

"The favourable wishes which your Lordship has expressed for the prosperity of this young and rising Country cannot but be gratefully received by all its citizens, and every lover of it. One mean to the contribution of which, and its happiness, is very judiciously portrayed in the following words of your letter—'to be little heard of in the great world of politics.' These words I can assure your Lordship are expressive of my sentiments on this head; and I believe it is the sincere wish of United America to have nothing to do with the political intrigues, or the squabbles of European nations; but, on the contrary, to exchange commodities, and live in peace and amity with all the inhabitants of the earth; and this I am persuaded they will do, if rightfully it can be done. To administer justice to, and receive it from, every Power with whom they are connected, will, I hope, be always found the most prominent feature in the Administration of this country; and I flatter myself that nothing short of imperious necessity can occasion a breach with any of them. Under such a

system, if we are allowed to pursue it, the agriculture and mechanical arts, the wealth and population, of these states will increase with that degree of rapidity as to baffle all calculation, and must surpass any idea your Lordship can hitherto have entertained on the occasion. To evince that our views (whether realised or not) are expanded, I take the liberty of sending you the plan of a New City, situated about the centre of the Union of these States, which is designed for the permanent seat of the Government; and we are at this moment deeply engaged, and far advanced in extending the inland navigation of the river (Potomac) on which it stands, and the branches thereof, through a tract of as rich country—for hundreds of miles—as any in the world. Nor is this a solitary instance of attempts of the kind, although it is the only one which is near completion, and in particular use. Several other very important ones are commenced, and little doubt is entertained that in ten years, if left undisturbed, we shall open a communication by water with all the lakes northward and westward of us, with which we have territorial connections; and an inland navigation, in a few years more, from Rhode Island to Georgia inclusively—partly by cuts between the great Bays and Sound, and partly between the islands and sandbanks and the Main, from Albemarle round to the River St. Mary's. To these, may also be added, the erection of bridges over considerable rivers, and the commencement of turnpike roads, as further indications of the improvements in hand."

To this voice from the wisest of her citizens in her greatest hour—this lesson of a conqueror as to the "true grandeur of nations"—the ear of America cannot be too often recalled.

POETRY OF THE MILLION.

Algiers the Warlike, and other Poems. By John Henry Pringle.—*A Voyage from Trinidad to Southampton.* By an Officer.—*A Book of Highland Minstrelsy.* By Mrs. D. Ogilvy. *The Sybil Spell.*

There has been an attempt to take the first of these volumes of verse out of the Category of the Million by retaining the engraver to surround each one of its pages with an anticipatory wreath. That this is a more shrewd and successful device for the purpose than any of those prefatory explanations or deprecations which, under the above head, we have had again and again to disallow, the multitude and circulation of our illustrated books may testify. The beauty of the setting will often divert the reader's attention from too critical an inquiry into the value of the gem. The apology of the Muse for her unavoidable absence is admitted when delivered by one of her own fair sisters. The glory of the humming-bird, as it glances like a winged jewel in the sunlight, is accepted in lieu of a song.—The value of the borrowed quality should, however, be unquestionable, where it would conceal the intrinsic deficiency. The former must amount to a temptation in itself; otherwise, it is an admission of weakness without supplying the needed strength. In the immediate case, the art makes a larger apparent pretension than it quite justifies. The verse conspicuously hides within its engraved borders, yet does not succeed in altogether eluding criticism by their aid. The ear is not taken captive by the eye. We are not so dazzled by the surroundings as to overlook the things inclosed. Not trusting, however, under the circumstances, to our own power of appreciation, we will simply take one of these out of its arabesque, and let the reader look behind it. As the framework, though of some pretension, does not amount to a positive value—unless he can find a value in the jewel itself to be added, the former has been wasted. As the Art does not protect the poetry—if it turn out that the poetry needed protection, the Art is thrown away.

Song.

Joy to the vine!
Out, out upon control!
Time is treading lightly,
Thanks to the bowl!
And, bonnily and brightly
The red waves roll.
Round with the wine!

Fill to the brim!
Out, out upon control!
When pleasure's eye grows dim,
There is light in the bowl.
Fill to the brim!
Out, out upon control!

Time is treading lightly,
Thanks to the bowl!
And, bonnily and brightly
The red waves roll.
Round with the wine!

The reader will, probably, be glad that the writer of verse like this has found his own wreaths,—and think, with us, that he did well to rely upon the laureate-giving power of the engraver.

The next candidate for the favour of the poetical public is 'A Voyage from Trinidad to Southampton, on board the Royal Mail Steam Packet Company's Ship the Forth,' done into verse, by an Officer:—and, it is fair to state, at the outset, that the author has apologized for this publication—as he ought. The purpose which has betrayed him into this offence, may be given in his own inspired language:—

Take a seat on the deck, and note down all your thinkings
In prose, or p'raps verse would be best;
And then, what with eatings, and sleepings, and drinkings,
The voyage will no more seem a pest.

Now, the author, we are sorry to say, has not sufficiently pondered on this text. He has confined himself to the selfish view of the matter—overlooking the circumstance that the transference of a pest is not its annihilation. If, in the above recipe for getting easily through a voyage, the "sleeping" infusion had been increased and the first ingredient omitted altogether, the voyager might have escaped *ennui* himself in a more creditable manner than by entailing it on a body of readers. We will put it candidly to him, now that he is on shore, if it be not hard that a public should have been called together to be made the recipients of travelling thoughts like these:—

From the isle that Columbus named after the Trinity,
When he first saw its beautiful shore;
Though then if he found any holy thing in it, he
Wouldn't now, for those days are all o'er.
* * *
Send us where cannons most loudly are roaring,—
Send us where colours above the fight fly—
Where the stout musketeers their hail-storm are pouring;
'Tis joy to be kill:d, though 'tis dreadful to die!

It is but justice to our author to admit that the scene on board the 'Forth' was not well calculated to feed the poetic spirit—but for that very reason, we think it should have warned away the poetic aspiration:—

Some they are dreaming of sugar, molasses,
And some of their dreams are undoubtedly "rum;"
Others, being sea-sick, pronounce themselves asses,
To 've ventured on board, and wish morning were come.

Perhaps there is no situation in which the Muse could show to less advantage than when sea-sick; and if the figure which she cuts in these pages be attributable to that condition, it excuses her ill-looks—but does not justify her exhibition of them before us landsmen. Nor is there cause why she should have thus put herself out of the way in any press of information which the voyager had to communicate.—

For St. Vincent's we steer
Which, in loveliness, rivals the rest,

makes no large accession to our stores of knowledge respecting that pleasant island; nor do we find that St. Lucia is rendered more familiar to our imaginations by the mere announcement that our officer "passed" it. Dominique, however, has a quality attributed to it which we do not remember to have seen before noted down,—and which recommends it as a salubrious residence for patients afflicted with the *cacoethes scribendi*:—

St. Lucia, Martinique
Are passed, and seemed quite beautiful to look at;
The next, the wildest p'raps, styled Dominique,
I shouldn't like to stop and write a book at.

Guadaloupe, the city of the earthquake, extracts from the writer's muse that novel contribution "the tribute of a sigh;" and then, his descriptions resume their summary character:—

Antigua next, then Nevis, then St. Kitts;
A long stretch then whilst down below we sleep.

In fact, we have from him, in verse, the ship's "run"—and the poem is, in great measure, like a mere plagiarism from the log of the 'Forth.'

At St. Thomas's, however, our author learned the beauty and beneficence of slavery as a West Indian institution; and confirms the moral by the horrors of freedom as fructifying in St. Domingo.—But sadder things than these awaited him at home. Well had it been for him, could he have sailed away his life in those tropic seas or set up his tent amid "the bright, the beautiful Azores" rather than made the Lizard to find what he found beyond it. Had the 'Forth' been the Flying Dutchman, doomed to walk the waters for ever and reach no shore—far better that he had been a passenger in her, than passed the Needles to learn what had been done in his absence. While he was rejoicing over the moral beauty of the slave islands—in "his own dear land," Cobden had conspired, Peel apostatized—and the corn laws were gone for ever! At first, the reader scarcely sympathizes with the vehement shock which the voyager seems to have sustained on landing:—but as the passion deepens, we shrink before the terror of his denunciations; and learning from his prophet Muse the horrors that await our corn-inundated England, begin to wish he had come a little sooner. "What did he in the West," while his country was thus hurrying to destruction? This law of bread is to be a law of starvation—as freedom in the Antilles makes men slaves!

'Tis thus I fear t'will be with thee, Old Isle!
Thou who did'st brave, with glory too, so long
Napoleon's strength, and more than human guile,
Art doomed to fall by *Famine.*

Here, our officer has the satisfaction to find a fresh confirmation of his argument against the dangerous principle of emancipation. Beginning with the human slave abroad, it is not to be stopped now, as might have been foreseen, at bread and sugar!—

Poor planters—ye whom I so lately left
Extolling Peel as saviour of the nation,
When of your sugar duties you're bereft,
How loud, how deep will be your execration!

Scarce half-recovered from the fearful shock
Of slaves, let loose, how can ye, will ye bear
This *coup de grace*, from those who madly mock
At all you suffer, and despise your prayer?

But we have no heart to pursue this theme. As the author says, with great shrewdness, of his poem—

Enough! and more than men will care to read.

Amid such minstrelsy as furnishes the ordinary themes of our articles under the above running title, Mrs. Ogilvy's handsome volume is entitled to a very honourable place. The poetry is not, *per se*, of that refinement or individuality which can take it out of the category; but the book contains, nevertheless, the evidence of a poetic and accomplished mind, and discourses pleasantly, as well as feelingly, of the characteristics and superstitions of the Highlanders. It takes nothing from the merits of a work making only the professions of this, that Mrs. Ogilvy's estimate of the Highland character is not such as the philosophy of history can ratify. It is of the essence of her success that she is herself enamoured of her

subject; and the charm of her volume consists in the avowed selection of its romantic aspects. But the poet or the romancer, however they may win the imagination or the heart to their own warm pictures, can no longer withdraw the Gael of the times which have been chiefly chosen for the exhibition of his figure from those sterner tests which place him low in the scale of national characters. Seen amid the accidents of mist and mystery which colour the physiognomy of his then scarcely accessible clime,—relieved against his dark background of unfamiliar mountains and reflected in the silent mirror of his own remote lochs,—it lent itself readily to that sense of the picturesque and poetical which has dealt with it as such properties have rarely been dealt with before;—but, even in so doing, it suggested to that examination which has revealed the meanness of the moral type. The very virtues of the Highlander were of low cast—and such as he shared with the inferior animals. A mountaineer, he had the hardihood and endurance which are born everywhere on the mountain. His fidelity was an instinct rather than a morality,—and, as such, degenerated into a slavish acquiescence and an unreasoning service. His hospitality was a quality conventional and artificial—serviceable enough as a dramatic property, but speaking little for its wearer's civilization. That brotherhood was the merest fiction which, beyond the circle of his own clannish superstition, conjured with mere words, and acknowledged the single spell of the bread and salt. Little admiration will be asked in prose for the respect which held life sacred amid the shadows of the watch-fire, but murdered at a stone's-throw distance. The virtues of the Highlander were merely things traditional; and out of their very rankness grew a multitude of personal vices. His fidelity to his clan was treachery to others—his submission to circumstances rendered him indolent and abject—and his hospitality, by being made, as we have said, an affair of words and conventions, had no meaning save the narrow one which these expressed. Cruel, vindictive, false, and steeped in ignorance and superstition, the Gael of the romantic times makes a display in a picture because of his very angularities and barbarisms—but shows most unfavourably in the moral lights of true and philosophic history. Mrs. Ogilvy tries hard to reconcile him to the modern censorship; but, as with Scott and others who have preceded her, the very advocacy of the case leads her into admissions which betray its badness. She has, however, collected for her purpose many interesting particulars that make pleasant reading of her volumes; and illustrated the legends which she evidently loves by a muse that reflects the poetry—and, so far as it can, hides the rest. The writer deals largely in chiar-oscuro—an allowable resource of the art which alone her book must be understood as professing. A few of her scattered comments on the various superstitions of the Highlanders will best illustrate her manner:—

"Among many others which have died away there was one superstition of mingled poetry and sadness, which it were a pity to have let pass into oblivion. It is alluded to by Miss Sinclair, in her lively tour entitled 'Shetland and the Shetlanders,' in these words, 'friends or lovers who part on a bridge never meet again.' What fatality did the Gael's imagination attach to the running waters below his parting feet? Did the friends then separating think that the stream which could not pause or return in its hurrying course typified the current of their lives, which, once dividing, might never flow back to the meeting place? This curious fancy was directly in opposition to all other Highland ideas regarding running water. It was generally considered to have an influence quite destructive of evil spells; and the fairies, when engaged in their predatory excursions, were often baffled by the intervention of a stream.—The Tahusk was the spirit-voice heard before a death. Sometimes it was like a human voice, but more frequently it would seem to come from the wild birds, whose mournfully piercing notes rung at evening over the mountains. From whatever quarter, however, it arose, there was always something unearthly in the tones by which the warning of death could be distinguished. The corncraik was one of those birds whose cry was particularly ominous. * * From the lonely mountains among which the Highlander dwelt every murmur of wind or wave bore to him a spiritual meaning, every shape of tree or rock, confused by the misty twilight, assumed a spiritual form. He saw portents in the cloud, and heard prophecies in the stream. There was attached a peculiar sacredness to the rights of sepulchre. It was believed that the spirit of the dead hovered restless and discontented around its former tenement, till the body to which it clung so affectionately was laid with becoming ceremonies in the grave. The unburied corpse was thus an object of indescribable horror to the living. * * The ghost of Celtic faith differed widely from the clumsy hobgoblins who excited the terror of Saxon rustics. To every living man was ascribed a wraith or double resembling him exactly in appearance, though generally invisible to all—born at his birth, growing with his growth, and descending with his body into the tomb. The wraith occasionally appeared during the lifetime of its mortal partner, but its visible presence always portended evil. From the grave it often returned to arrange business which the deceased had left unsettled, or, in cases of violent death, to stimulate the survivors to revenge. Sometimes, however, the ghost played a more Christian part, when it visited the mourning friends to console or rebuke them, if their grief for the dead passed the bounds of religious resignation. * * It has been well said by Mrs. Grant, of Laggan, that the Second Sight of the Highlanders differed from all Heathen divinations in this important respect, that it was entirely involuntary. It is described by this elegant and imaginative essayist, as a 'shuddering impulse, a mental spasm, that comes unsought, and often departs without leaving a trace behind by which it may be connected with any future event.' The Highland seer did not go about, like Balaam, to seek for enchantments; his gift was a fatality, and was generally as unwelcome as unlooked for. He was not consulted by those curious to pry into futurity; he made no trade of imposture; no honours were attached to this mysterious endowment; the prophet was shunned rather than regarded by the vulgar. Instead of possessing, he was possessed by, the spirit within him,—over the working of which he had no control. The seers were almost always persons of weakly health, of solitary tastes, of morbid and melancholy temperament. They were themselves deceived, not deceivers of others; living much alone in the seclusion of the mountains, indulging in gloomy reveries, till the dreams on which their diseased fancy habitually fed grew at length distinct and palpable. Hence it was no wonder, if, predisposed to credulity by education, they should imagine such appearances realized to their senses as well as to their thoughts. The seventh son of a seventh son was supposed, by the accident of his birth, to be gifted with this unenvied power. The consciousness of being so considered by those around him would of itself foster in the mind of the unfortunate child a dreamy habit of reflection, an abstraction of manner, and a feeling of being unlike others, calculated, as he grew to manhood, to isolate him more and more from his fellows, and to teach him to people with apparitions the solitude of his soul. * * * The Highlanders believed that when a burial took place in their mountain churchyard the spirit of the deceased was compelled by some mysterious law to keep watch there by night until relieved by another interment, when the ghost of the newly-arrived corpse assumed his unwelcome duties, and the weary wraith passed to its ultimate destination whether of happiness or woe. It must have been an irksome duty to be thus excluded from earth's interests without being admitted to participate in the joys of heaven. The successor was obliged in his turn to await another interment, and the advent of another ghost to give him liberty. If we can fancy this bodiless watcher to preserve any consciousness of the doings on that earthly scene, in which he could no longer take an active part, we may picture the irritation and eagerness which would impel him to wish that all sickness among his old companions might end in death, that all accidents among the dangerous crags and morasses might prove fatal to life as well as limb. Far from an improving preparation for the holiness of heaven was this detention below; when the unhappy ghost, shivering in the frosty moonlight, counted over the chances of mortality among his former friends,—no doubt complaining fretfully of a delay which retarded his own release and prolonged his own discomfort. Yet to those who felt themselves by the verdict of their consciences to be destined for eternal retribution, how awful must have been this breathing-time between the sins and the avengement! How dreadful the retrospect! how far, far more dreadful the anticipation! In the awful solitude of the desolate graveyard how active would memory be, how mighty remorse! The mind turns shuddering from an idea of so much horror."

Mrs. Ogilvy has a pleasant chapter on the Celtic elves:—and a few verses from a poem called 'The Fairy Lament,' which illustrates their inveterate habit of kidnapping children, will show how she manages the instrument of verse for extracting the poetry of her subject. The lady of this Lament has been stolen from her home, in that most perilous hour of exposure to fairy devices which succeeds delivery in child-bed,—and made the bride of an elfin chieftain.—

Time can heal the gaping cleft,
Hope in every heart is left;
Newly wived the husband smiles,
Youthful sport the boy beguiles:
Sadder lady ne'er was seen.

Home once lighted by her face
Bears of her no tender trace;
Constant as of old is she
In her forced captivity:
'Ware ye of the fairy green.

She is decked with magic gem,
Moonshine's dewy diadem,
Yet she keeps her earthly vows,
Shrinketh from her elfin spouse:
Truer lady ne'er was seen.

Nought her human kinsmen know
Of that lost one's weal or woe;
O'er her fate mysterious spread
Darkness such as veils the dead:
'Ware ye of the fairy green.

But to her, in fairy land,
Comes the power to understand
All they feel and all they do,
Barbing every grief anew:
Sadder lady ne'er was seen.

Where the enchanted Tomhaun heaves
Underneath the birchen leaves,
In a grass-green robe she stands,
Seems to moan, and wrings her hands:
'Ware ye of the fairy green.

All the fay's ethereal gleaming
Blends she with a woman's seeming;
Every eye is sad to view,
Every heart the sight must rue:
Lovelier lady ne'er was seen.

Where the shades of tall Craig Our
Dark on Lochan Uvie lower,
Spelled from home to stand aloof,
Points she to her husband's roof:
'Ware ye of the fairy green.

Never speaks she,—'tis forbidden,
Only weepeth sore when chidden;
Yearneth on her child to look,—
Absence ill can mother brook:
Tenderer lady ne'er was seen.

She must mourn, and stand afar,
Flickering like a falling star,
Till the latter days befall
Which shall burst each elfin thrall:
'Ware ye of the fairy green.

'The Sybil Spell' we have read from beginning to end without detecting the spell or finding the sibyl. A property of the classic sibyl, no doubt, the muse of this writer has; but *that* she has probably involuntarily—and perhaps unconsciously. The books of the lady of Cumæ, as our readers know, were valuable in proportion to their *scarceness*. The more of them she offered, the less they were worth. A *dearth* of such verse as we have, for the most part, to deal with in the series headed with the title of this article, would be worth paying for. Here

is a very small volume; but, were we compelled purchasers, we would rather pay twice its price for half as much. Men, for whom life is not the merest idleness, should be glad to raise their terms for every volume of such sibylline leaves committed to the flames.

Ecclesiastical Reminiscences of the United States. By the Rev. E. Waylen. Straker.

The author, as rector of Christchurch, Rochville, Maryland,—as enjoying an acquaintance with the Americans for eleven years, and as having been associated with all classes in the United States,—considers himself qualified to decide that "the Americans, as a race of people, inherit most of the good, and are free from many of the bad, qualities which distinguish the nation whence they have sprung; nor has the free intermixture of continental blood effected any deterioration in their mental or physical qualities." Religious influences, however, in his opinion, have had greater power over their manners than political:—and he further holds that such influences require regulative control by means of a Catholic system. He is for fighting the battle of the Church under the banner of apostolic order.

Mr. Waylen commences his work with the particulars of his journey from Bristol to New York in the year 1834. The interest of the book, however, is not of a tourist character—being mainly occupied with tracing the fortunes of the Church of England in the United States;—and attaches itself to the principle that the episcopal form of ecclesiastical government is best suited "to the genius of American institutions." Leaving his argument to other handling, we must content ourselves with a few anecdotes.—The following will be welcome to Mr. Jesse:—

"There is a sheet of water, twenty-eight miles long, lying some miles to the north of our road called Lake Winnipiseogee which is justly celebrated, both for the beauty of its shores, and the flavour of the fish with which it is well stocked. On the north of this inland sea are some dense forests from which the bears, a native of New Hampshire, are not yet wholly extirpated. * * Some years ago a cub bear was caught by a stout lad near the borders of Lake Winnipiseogee, carried into the town, and after proper drilling became the playfellow of the boys of the village, and often accompanied them to the schoolhouse. After passing a few months in civilized society, he made his escape into the woods, and in a few years was almost forgotten. The schoolhouse, meantime, had fallen from the schoolmaster's into the schoolmistress's hands: and instead of large boys learning to write and cipher, small boys and girls were taught in the same place knitting and spelling. One winter's day, after a mild fall of snow the door had been left open by some urchin going out, when, to the unspeakable horror of the spectacled dame and her fourscore hopeful scholars, an enormous bear walked in, in the most familiar manner in the world, and took a seat by the fire. Huddling over the benches as fast as they could, the children crowded about their schoolmistress, who had fled to the farthest corner of the room, and there they stood crying and pushing to escape the horror of being eaten first. The bear sat snuffing and warming himself by the fire, showing great signs of satisfaction, but putting off his meal until he had warmed himself thoroughly. The screams of the children continued; but the schoolhouse was far from any other habitation, and the bear did not seem at all embarrassed by the outcry. After sitting and turning himself about for some time, Bruin got up on his hind legs, and shoving the door close, began to take down, one by one, the hats, bonnets and satchels that hung on several rows of pegs behind it. His memory had not deceived him; for they contained, as of old, the children's dinners, and he had arrived before the holidays. Having satisfied himself with their cheese, bread, pies, doughnuts and apples, Bruin smelt at the mistresses' desk; but finding it locked, gave himself a shake of resignation, opened the door and disappeared. The alarm was given, and the amiable creature was pursued and killed; very much to the regret of the town's people, when it was discovered, by some marks in his body, that it was their old friend and playfellow."

There is a witch tale or two concerning a plot contrived by two puritan divines in Salem, named Mather and Noyes, in the latter part of the seventeenth century,—and which ended in persecution and bloodshed. A specimen of the American variety of this sort of persecution may be given, for the benefit of our readers:—

"The next person accused was carried into the meeting house in the village, and confronted with the accusers. As soon as the poor old woman was brought in, they uttered loud screams, and fell down upon the floor. If in her terror and despair she happened to clasp her hands, they would shriek out that she was pinching them. When she pressed in agony her withered lip, they exclaimed that she was biting them, and would show the marks of her teeth upon their flesh. If the dreadful excitement of the scene, added to the feebleness of age, exhausted and overcame her, and she happened to lean for support against the side of the pew or the aisle, they would cry out that their bodies were crushed; and if she changed her position, or took a single step, they would declare that their feet were in pain. In this manner they artfully produced a strong conviction in the minds of the deluded magistrates, and excited bystanders. On these occasions the proceedings were always introduced by prayer and addresses from the most influential ministers of the vicinity, who were decided in countenancing, and active in promoting them. The afflicted, as they were called, did not rest with merely accusing their victims of having bewitched them, but testified on the stand that they had been present with them at their diabolical meetings, had witnessed them partaking in the visible company of Satan, of his blasphemous sacraments, and had seen them sign his book with their own blood."

A special commission appointed to inquire into the charges brought by these Transatlantic witch-finders resulted in the execution of fourteen persons, men and women. The conspirators then became more bold, and caused the members of the most distinguished families—even the wife of the governor, Sir William Phipps, and one of the judges of the court—to be accused:—

"But that which finally otherthrew their power, and broke the spell by which they had held the minds of the whole colony in bondage, was their accusation of Mrs. Hale, the wife of the minister of the first church in Beverly. Her genuine and distinguished virtues, had won for her a reputation, and secured in the hearts of the people a confidence, which superstition itself could not sully nor shake. Mr. Hale had been active in all the previous proceedings; but he knew the innocence and piety of his wife, and he stood forth between her and the storm he had helped to raise. Although he had driven it on while others were its victims, he turned and resisted it when it burst in upon his own dwelling. In crying out upon Mrs. Hale, the whole community was convinced that the accusers had perjured themselves, and from that moment their power was destroyed; the awful delusion ceased; the curtain fell; and a close was put to one of the most tremendous tragedies in the history of real life. The wildest storm, perhaps, that ever raged in the moral world instantly became a calm; the tide that had threatened to overwhelm every thing in its fury, sunk back in a moment to its peaceful bed. There are few, if any other instances, in history of a revolution of opinion and feeling so sudden, so rapid, and so complete. The images and visions that had possessed the bewildered imaginations of the people flitted away, and left them standing in the clear sunshine of reason and their senses."

For a full account of the delusion we must refer to the book. Of all things fanaticism is the most malignant. It is dreadful, says one of the narrators of the facts, to reflect upon the enormity of the wickedness of the witnesses; "it seems to transcend the capabilities of human crime." The author devotes a chapter to the subject of witchcraft in England during the early part of the same century. The superstition, extinguished at that period in the old world, yet survived for something more than a quarter of a century longer in the new.

The subject of college education in the United States is treated by our author at length. According to him, a too large amount of *nominal* study is required,—which sends out the graduates superficially educated. The voluntary principle, also, in his opinion, works ill in the United States; but he writes, evidently, under considerable prejudice. The Roman-Catholic bishops in America are treated in such a feeling; while the celebrated Oxford Tracts have his implied approbation. Nevertheless, his descriptions of the American clergy are sometimes interesting and even amusing. For instance, America is not without its Rowland Hills in the pulpit:—

"I met with a remarkable instance of this style while on a subsequent visit to Baltimore, in a preacher named Knapp, who was conducting a 'protracted meeting' at the 'First Baptist' meeting house in Lombard Street. He was a man of uncommon powers, and skilled in all the tricks of popular oratory, which he practised with the most complete success. He preached every day, and three times on Sundays for a number of weeks, drawing the whole city to the meeting-house. A church adjoining was even closed, from the temporary desertion of the worshippers to listen to the exhibitions of the revivalist preacher, and the number of communicants added to the society, on whose behalf the visit was made, was more than quadrupled. His sermons, though frequently admirable, and well adapted to a mixed auditory, were sometimes marred by the grossest vulgarisms, which even bordered on profanity. Puns, low proverbs, familiar anecdotes, and dialogues would succeed each other, accompanied with gestures, in which the action was suited to the word; exciting alternate risibility and sensation, and lowering the pulpit to the level of the stage, making 'the judicious grieve.'"

We may observe, in conclusion, that good sense is the quality by which this volume may be generally characterized.

OUR LIBRARY TABLE.

Notes on the New Reformation in Germany, and on National Education and the Common Schools of Massachusetts. By G. Combe.—*The Mission of the German Catholics.* By G. G. Gervinus.—*The Autobiography and Justification of Johannes Ronge.*—Translated from the German. By J. Lord, A.M.—*Luther Revived; or, A Short Account of Johannes Ronge.* By A. Andresen.—These are a few of the multitudinous pamphlets on the subject of the demonstration of Ronge and Czerski. We have already spoken of this movement; and pointed out the predominance of the political element which, in our view, distinguishes it essentially from the Lutheran Reformation. This is owing partly to the character of the age, and partly to that of the men who have come forward as the present denouncers of superstition. We learn, however, from these pamphlets some historical facts,—which, as such, are of value. It was, at first, proposed by the leaders to attempt only the reform of the Catholic church; but the course of events overruled this limitation of their plan. "The parishes and the laity themselves took the work of reform in hand; the renouncing clergy fell in with their views to proclaim anew the primitive and Lutheran general priesthood, and to give it (the general priesthood) a constitutional recognition in this new church." Here, we have another phase of Dr. Arnold's scheme of the lay-diaconate amongst ourselves. The spirit of the age and public opinion favoured the plan in Germany. Gervinus states the fact enthusiastically and triumphantly:—but his notion that mediocrity is sufficient in these times to effect the revolutions which required genius in former periods—that we no longer need a Luther or a Leibnitz, but may serve our purpose with a Ronge or a Czerski—is not very complimentary to the dominant spirits of the modern movement. It would be premature, too, to assert that it is true. The benevolence and talent

of Gervinus are beyond dispute. He holds the possibility of constructing "a clear, reasonable, and joyous system of religion;"—and writes well in its support. —We cannot say as much for Mr. Combe; who encumbers his subject with comparisons between the philosophic systems of Hegel and Schelling,—and other such merely collateral topics. There is, however, some documentary matter in his pamphlet to which attention is desirable.—In Andresen we recognize an enthusiastic follower of the movement—nothing more.

Letters to a Bride. By Emma Pessina.—A little book in the spirit of 'Woman's Mission,' and works of that class;—the success of which has naturally induced imitation. Generally written by females, they help, at least, to demonstrate that Woman has risen to a sense of her own importance. This is a valuable social movement; but misses the good when it takes the form of a challenge,—and endangers its own continuance by provoking reaction, instead of encouragement.—The present *brochure* is marked by seriousness and good sense.

Family Affairs. A Comedy.—The writer, in his preface, says that "when an unacted play makes its appearance in print, it is generally looked upon as a thing that has taken refuge in the book-shop, after being turned out of the theatre." There is in the public no such prejudice against unacted plays, nor implied respect for the judgment of managers. The neglect at which the complaint points arises simply from indifference. It is of the nature of a play to be acted, no doubt; and it loses by non-action certain advantages that acting would give it,—not the least being the especial advertisement of the stage-bill:—but these are considerations which do not affect the critic. Acted or unacted, his judgment of a play deals with it merely as a literary work. In the one before us, we are ready to confess that we have seldom met with better comic dialogue. There is a sparkle about it which frequently pleases, and a felicity of imagery that sometimes does more. But as a piece of dramatic composition, the piece is ludicrous. In the first place, there is no plot; and in the next, there is no proportion in the distribution of the acts. The fourth occupies twenty-eight pages—the fifth somewhat less than a page and a half. The stage-direction with which the latter concludes,—"A dance by all the characters," will supply the disproportion as little on the stage, as for the critic. The characters are tolerably well shadowed out; and there is one striking situation. But without story and structure, we fear that, well executed as the dialogue in general is, this comedy will not only never enter the "theatre," but never leave "the book-shop" for the book-case. The Library requires a certain fitness—as much as does the stage—from the candidate for acceptance.

Cosmos. By Alexander von Humboldt. Vol. I. Translated under the Superintendence of Lieut.-Col. Edward Sabine.—This new translation of the illustrious Humboldt's 'Physical Description of the Universe' has been undertaken, the author informs us, at the wish of the Baron himself; and is illustrated, also at M. de Humboldt's request, by a few notes in such parts as treat of the branches of science with which Col. Sabine is more especially conversant. The two introductory discourses appear in this translation as rewritten by the German author in the French language, for a French edition,—and communicated to the English editor in their passage through the press. The work in its previous English form has been already noticed at length in our columns [No. 929].

Bishop Heber and Indian Missions. By the Rev. J. Chambers.—One of those small compilations on attractive subjects, designed to give the results of much reading, which so frequently emanate from the book-stores of our theological publishers;—and executed with about the usual amount of tact.

Oral Exercises in French Phraseology, Synonymy, and Idioms. By H. S. Turrell.—A very useful book for those who have made some progress in the language;—rendered themselves masters of the leading rules of syntax, and able to translate with tolerable facility. It seems better adapted for private than for public learners—though likely to prove valuable to both.

Jeanne d'Arc; a tragedy. By A. Soumet.—One of the poorest specimens of the modern French school of serious drama in rhyme;—neither classical nor romantic;—and owing its publication in the present form to Mdlle. Rachel's performance of the character at the St. James's Theatre.

LIST OF NEW BOOKS.

Black's Picturesque Tourist of Scotland, 12mo. 8s. 6d. cl.
Chambaud's (L.) Fables Choisis, par G. Wells, A.M. (Edinburgh) 2s.
Desbyon's French Tutor, new edit. 12mo. 4s. cl.
Dick's Christian Philosopher, revised, Vol. I. 12mo. 1s. 6d.
Edgeworth's (Miss) Stories for Children, 'Garry Owen' and 'Poor Bob,' in 2 Parts, 18mo. 6d. each, swd.
Edgeworth's (Miss) Early Lessons, in 17 Nos., viz. 'Frank,' 6 Nos.; 'Rosamond,' 6 Nos.; and 'Harry and Lucy,' 5 Nos. 18mo. 6d. each.
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FOLK-LORE.

Worcestershire Legends.

Mr. Allies having done me the honour to forward a copy of his pamphlet '*On the Ignis Fatuus, or Will-o'-the-Wisp, and the Fairies,*' I have ventured to extract from it the following passages, and to accompany them by some few annotations,—with the view of showing how many materials towards a developement of the Popular Mythology of these Islands may yet be gathered, in any locality where the collector undertakes his task with the zeal and perseverance of Mr. Allies.

The Osebury Fairies. "According to tradition, that interesting headland called Oseberrow or Osebury (vulgo Rosebury) Rock, which lies not far from Alfrick, and is situated upon the border of the river Teme, in Lulsley, opposite to Knightsford Bridge, was a favourite haunt of the Fairies. It is said that they had a cave there,—which is still shown, (as is also a hole called the Witch's Oven); and that once upon a time, as a man and boy were ploughing in an adjoining field, they heard an outcry in the copse on the steep declivity of the rock; and, upon their going to see what was the matter, they came up to a fairy who was exclaiming that he had lost his pick—meaning his pickaxe; this, after much search, the ploughman found for him; and thereupon the fairy said, if they would go to a certain corner of a field wherein they had been ploughing, they would get their reward; they accordingly went, and found plenty of bread and cheese and cider, on which the man feasted heartily; but the boy was so much frightened that he would not partake of the repast."

"It is also said that, upon another occasion, a fairy came to a ploughman in the same field and exclaimed—

> Oh! lend a hammer and a nail,
> Which we want to mend our pail."

"As a countryman was one day working in a field in Upton Snodsbury, he all of a sudden heard a great outcry in a neighbouring piece of ground, which was followed by a low mournful voice saying 'I have broke my bilk, I have broke my bilk;' and, thereupon the man picked up the hammer and nails which he had with him, and ran to the spot from which the outcry came, where he found a fairy lamenting over his broken bilk, which was a kind of cross-barred seat; this the man soon mended, and the fairy to make him amends, danced round him till he wound him down into a cave, where he was treated with plenty of biscuits and wine; and, it is said, that from thenceforward, that man always did well in life."

The name of one of the localities mentioned in these legends is too remarkable to be passed without observation—Alfrick—which means, literally, *Elf, or Fairy, Kingdom;* while, as to the legends themselves, it is to be remembered that Grimm has pointed out that it is one of the characteristics of the elfin race to require the assistance of mortals in matters of difficulty: and if, on the one hand, the elves frequently help men by their handicraft, on the other, the legends in which they seek human aid are scarcely less frequent. Women and midwives are often spirited away to assist at the birth of fairy children; and then, after being richly rewarded for their attendance, restored in safety to their families. Grimm refers to stories of fairies borrowing rooms, in which to celebrate their wedding feasts,—for which accommodation they used to pay handsomely; old Aubrey, in his 'Remains of Gentilism,' mentions, on the authority of Mr. Ashmole, "a cavous place in Surrey, where people against weddings bespoke spits, pewter, &c., and they had it;" and Busching, in his Volks-Sagen, mentions a corresponding tradition of the people of Tilleda going to the Kyffhauser Mountains, for spits, pewter, &c., on similar occasions.

The Seven Whistlers.

"Whether these were fairies, or wizards, or Fates, I cannot pretend to say; but I have been informed by Mr. John Presdee, late of Alfrick, and now of Worcester, that the country people used to talk a good deal about the Seven Whistlers, when he was a boy, and that he frequently heard his late grandfather, John Presdee, who lived at Cuckold's Knoll, in Suckley, say that he oftentimes, at night, when he happened to be upon the hill by his house, heard six out of the Seven Whistlers pass over his head: but that no more than six of them were ever heard by him, or by any one else, to whistle at one time; and should the seven whistle together, the world would be at an end. This is a very remarkable legend;—and it is strange that such a fancy should have been credited down to nearly this our time. It probably took its rise either from the occasional peculiar whistling of the wind, or from flights of wild fowl, such as plovers, widgeons, or teal, which do sometimes fly at night, and make a rather singular whistling noise."

This remarkable legend, as Mr. Allies very properly designates it, is clearly connected with two curious points in Popular Mythology:—one, that which represents the departed soul as flying away in the shape of a bird—an instance of which the reader will remember in the pathetic story of 'The Juniper Tree,' in the translation of the 'Kinder und Haus-Märchen,' where the spirit of Margery's little brother, whom his step-mother had so cruelly put to death, flies from the Juniper Tree in the likeness of a bird. The second point of connexion is with that extensive class of legends relating to what is known in this country as the Wild Host,—of which the Wild Huntsman, in 'Der Freyschütz,' is perhaps the most familiar type. In one of the German legends quoted by Grimm, from Otmar's 'Collection,' mention is made of a spirit called Tutosel, or *Toot-Owl,* said to have been a nun; who, after her death, was, for some crime, condemned to associate with the Wild Huntsman,—and who is ofttimes heard in the air, where she joins her *tooting,* or whistling "*uhu,*" to his well-known and dreaded cry.

I fear I have already exceeded the limits prescribed by you, or I should like to call attention to other legends in Mr. Allies's 'Collection';—such as 'The Devil's Dream,' &c. But I must quote one short passage; since it shows how the Horse still maintains, among our peasantry, traces of that mysterious character, with which it appears to have been invested in the mythology of our forefathers:—

"Horses are supposed to see ghosts, even when the ghosts are invisible to the riders of the horses. Upon my once asking a countryman whether he had ever seen a ghost, he said, 'No, but my horse has.'"

AMBROSE MERTON.

Devonshire Pixies.

Every farm, wood, and almost every tree or gate, in the village of Coombe, near Teignmouth, has some tale of *wiskedness.* At a farm-house at the end of the village, some half-century since, the Pixies nightly assembled in the kitchen after the family had retired to rest,—the servants taking care to leave a pail of water for the tiny people to wash their babies

in; who, in return, left a piece of money at the bottom of the vessel, carefully sought after by the earliest riser among the maidens. One night the farmer thought to watch them at their revels; and concealed himself behind some wheatsheafs placed before the oven for that purpose. On his moving that he might see them more distinctly, one of the elves called out to her husband, "Edward, Edward, the sheaf's put forward;"—when they immediately seized the farmer, pinched him black and blue, and never favoured the house again with their nightly visits.

Many a story is told of the solitary traveller being *Pixy-led;* in which case he may in vain pace some well-known road or field, without a hope of proceeding to the place of his destination, unless he have sufficient presence of mind to *turn his stocking*, or some other part of his dress.

From Coombe, through an avenue of "branching elms star proof," the road towards the sea leads to a group of cottages close to the water,—so near together that they might be almost covered with one roof; and tenanted by aged people, owners of their respective dwellings, with their children and grandchildren,—and who, pleased with our frequent visits, told us their joys and sorrows, and many a story. A point of land running into the water was shown to us, where some unfortunate little woman was chased by a pack of *whisked hounds*, led on by their unearthly huntsman,—fire issuing from their mouths. She was unknown; but it was concluded that her evil deeds had brought upon her this punishment. These hounds are frequently heard; and woe be to the wight who speaks as they pass, or who is out upon any dishonest errand! But if performing a duty or engaged in some honest calling, he feels sure of passing unharmed.

Persons labouring under any lingering complaint are frequently impressed with the idea that some one has *power over them*,—or that they are under the influence of an *evil eye*. R. P.

We have retrenched those portions of R. P.'s communication which treated of generalities only. That there is a vast body of "traditionary lore" floating among our peasantry, cannot be doubted. Our object in opening our columns to communications on the subject of Folk-Lore was, not to establish that fact, but to collect the legendary fragments themselves. The "many stories" told to R. P. are what we are desirous of preserving,—not the fact that they were so told. We have, in the interesting notes which he has given us, some points of Popular Mythology well illustrated. A love of cleanliness, and an aversion from being watched by mortal eyes, characterize the Pixies of Devonshire in common with the elves of Germany;—the Hell-hounds sweep across the Devonian moors, equally with the Hartz Forest;—and the Evil Eye there sheds its baneful influence. Will not this latter fact tempt some "worthy of Devon" to compete with Nicola Valletta's 'Cicalata sul Fascino volgarmente detto Jettatura'?

A Charm to prevent the Prick of a Thorn from festering.

I send you a charm which the old women in Wiltshire vow to be very efficacious. When I came home from birds'-nesting, with my hands, and sometimes my face, well studded with thorns, they were extracted with a needle, and the finger passed over the wound, with these words:—

Unto the Virgin Mary our Saviour he was born,
And on his head he wore the crown of thorn;
If you believe this true, and mind it well,
This hurt will never fester, nor yet swell.

P. P.

Of the value of such charms as these, and the propriety of securing a collection of them, Grimm speaks very decidedly. Two of them, which he found in a MS. of the 10th century, form the subject of an essay by him, published in a recent volume of 'The Transactions of the Royal Philosophical Society of Berlin.'

FOREIGN CORRESPONDENCE.

Berne, Sept. 5.

I know not if you have heard of the lamentable loss of life and property which has been occasioned by the tremendous floods in Switzerland. These have made vast tracts of land utterly waste and desolate. Nothing else is spoken of here; and each day brings fresh tidings of destruction in the more remote parts of Switzerland. A hundred men, armed with long poles and hooks, are stationed, day and night, on the banks of the Aar, under the platform adjoining the cathedral, for the purpose of arresting objects floating down the torrent; and at night, tar-barrels are laid along the brink of the stream,—whose flickering light shines far over the wild rushing waters. Instead, however, of an historical or statistical account of these floods—which greatly exceed any remembered by the oldest inhabitant of Berne, and are due to the combined causes of the extraordinary melting of snow and the excessive rains,—I send you a sketch of my passage over the Gemmi and walk to Thun,—accomplished under no ordinary circumstances. Your readers who have "done" this portion of Switzerland, as the phrase is, may remember to have passed over an excellent road carried occasionally across rivers on seemingly substantial stone and wooden bridges. Miles of this road have disappeared,—buried beneath enormous *débris* brought down by the torrents; and the bridges, with the exception of the very massive one spanning the Kander near its embouchure in Lake Thun, are demolished,—their foundations having been either sapped or fairly swept away by the overwhelming force of the waters.

It is meteorologically curious that, whilst it had been raining for seventeen days in Oberland,—drowning the romance and enthusiasm of even the most romantic and determined tourists—we, more fortunate explorers of Piedmont, escaped. On the south side of Mont Blanc, on the shores of the lovely Lake Orta, and amongst the mountains surrounding the latter, the weather was all that could be desired. It was not till, after passing the mountains, we descended into the Valais that we became immersed in mist and rain. While waiting at Leukerbad for better weather to cross the Gemmi we first heard of the ruin going on in Switzerland. What more immediately concerned us was the report that the Gemmi was impassable; for, desiring to reach Thun as early as possible, we were in no humour for making a *détour* of 200 miles, by Martigny, Vevay, and Fribourg. Having crossed this very remarkable pass on a previous occasion, I felt convinced, however, that the path leading up the Gemmi, carved as it is out of the vertical rock, could not be destroyed by mere rain; so we finally resolved on setting out for Kandersteg in weather that was far from inviting. We carried our own knapsacks, and dispensed with the services of a guide. A few minutes after leaving Leukerbad we entered the thick mist; and during the entire ascent of the rock-shelf path, might as well have been zigzagging up a well—for the scenery, far and near, was a blank. At 500 feet from the top the rain fell in torrents, and continued to do so during the rest of our walk. Onward we hastened, over the seared and naked limestone rocks which form the summit of the pass, until we came to the Lake of Dauben,—which was so swollen as to compel us to make large *détours*. About two miles from the lake the path descends—at first through pasture-lands and subsequently through pine forests. We descended in the midst of torrents that plunged madly down with deafening roar;—those of spotless foam dashing their waters against others of a rich brown colour, communicated by the earth through which they ploughed their way. Every yard of the descent gave birth to a new cataract,—until the mountain side seemed covered with a net-work of waterfalls. At length, we emerged from the pine forest; and saw, to our dismay, the hamlet of Kandersteg standing in the midst of a lake which extended as far as we could discern. The well-remembered Cheval Blanc, famous for its excellent trout, was a little islet in a waste of waters—a dreary prospect for three tired and soaked travellers. As evening was closing fast, however, we pushed on; and reached the Kander,—which had assumed the appearance of a large river, completely overflowing and destroying extensive portions of the path. We followed the direction of the latter as best we could, until it fairly disappeared beneath the waters of the lake—on the brink of which we were brought to a stand-still. The inn was about two hundred yards distant; standing on a narrow elevation of dry ground, which seemed to be momentarily growing narrower. The unfortunate inmates of the chalets that form the small hamlet were rushing to and fro, conveying articles of provision and furniture to places of greater security. By their guidance we made our way through the water, and reached the inn in safety.

The roaring of the water that surrounded us during the night was awful; and, to increase the terror of our situation, we learned that the Lake of Œschinen, about five miles above Kandersteg, was expected every moment to burst its banks,—in which case no human aid could have saved us from being swept away like corks. No one belonging to the house went to bed that night; and I confess to the sense of relief with which I hailed the morning—though it showed a scene even more wild and dreary than that of the previous evening. The precipices around were ribbed with foaming waterfalls,—that seemed to descend from the black clouds covering the mountains. The torrents from the Lakes of Œschinen and Dauben had sensibly increased; and the temporary lake formed by their waters had risen four inches during the night. Under such circumstances, notwithstanding tidings had reached us that all the bridges between Kandersteg and Frutigen were destroyed, we deemed it advisable to proceed, rather than trust longer to the uncertain and frail tenure of our little island; and having, with some difficulty, engaged a guide, we set off at seven o'clock for Thun. We had not walked many yards from the inn when we found ourselves confronted by the waters, which were rushing down in a torrent of some four hundred yards broad,—sweeping stones and pine trees in their course. It is utterly impossible for me to convey to you any just idea of the scenes of desolation which we witnessed during this adventurous walk. At times we had to thread our way amongst huge rocks, brought down from the mountains by the force of water alone,—and reducing large tracts of land, lately covered by luxuriant crops, to barren ruin. Peasants were rushing here and there, with baskets on their backs; endeavouring to save the wrecks of these crops as they lay stranded upon the brink of the torrents. Hundreds of men, women, and children were in places, dragging enormous pine trees, and laying them along the banks of the Kander, for the purpose of preventing the waters flowing over the adjacent land; and the engineers of the canton, accompanied by large bodies of labourers, were hastening to those spots which more immediately required their attention. Without a guide, we should never have reached Frutigen. The river Kander, which had taken mad possession of the bottom of the valley, had entirely obliterated all trace of the once excellent road; and the bridges, which had stood for many years, had disappeared, leaving scarcely a stone to tell of their former existence. The picturesque and handsome covered wooden bridge at Frutigen had partly fallen in, only two hours before our arrival. One end hung in the torrent, and was waving to and fro like an agitated reed. Numbers of the inhabitants were endeavouring to secure it from being swept down the rapid; and others were assisting in constructing a temporary foot-bridge, formed of large pine trees, merely divested of their branches and thrown over the river. A nervous matter was the crossing this frail and slippery substitute,—unprotected by even a hand-rail,—and within a few feet of which raged the torrent with an impetuosity that made the eyes ache to behold it.

From hence to Thun, the same succession of melancholy scenes presented themselves. Near Mühlinen, the inhabitants were threatened with the total destruction of their village. The hostess of "The Bear" (an Englishwoman) informed us that the farmers were, generally, ruined. As we emerged from the valley of Frutigen, appeared the soft and beautiful Lake of Thun,—strangely contrasting with the turbulent scenes which we had witnessed: but even here, the lake, swollen by the floods, had overflowed, not only the road, but also extensive tracts of country. A kind of causeway, formed of planks laid on upright posts, extended for some distance over the water; and when this terminated, we hired a cart, and drove through water, about two feet deep, into Thun,—where we arrived, much exhausted, after a laborious walk of eleven hours.

On the day following, I had the curiosity to ascend the tower of the church: and how altered was the scene! The meadows and pasturages, dotted with pretty country houses and smiling flower-gardens, were exchanged for an expanse of water,—the lake

extending to the very houses of Thun. The old sexton, who used to point out the beauties of the scene with pride and pleasure, almost wept as he gazed upon the ruin beneath. There, too, might be traced the cause of the mischief, in the form of the Kander, rolling its dirty brown torrent into the clear Lake of Thun,—whose clear waters seemed to shrink from the pollution.

The lower or old town of Berne has greatly suffered. It lies, as you may remember, on the banks of the Aar,—the waters of which overflowed nearly all the houses. I have not heard of any loss of life here; but in various parts of Switzerland men have perished. The floods are now on the decrease;—the Aar having, since last night, fallen three inches.

C. R. W.

OUR WEEKLY GOSSIP.

The British Museum is again open to the public; the opportunity afforded by closed doors having been taken to effect a variety of changes in the situation of its contents, in anticipation of the arrangements prescribed by the approaching completion of the new buildings. Considerable alterations are going on in the Elgin Hall, as well in the arrangement of the bas-reliefs on the walls as in the position of the larger marbles:—and in the ante-room, ranged on each side of the approach to this treasure room, are appropriately placed Mr. Lucas's Models of the Parthenon as a help to the reading of their precious texts. Sir Thomas Lawrence's collection of Architectural Casts has made way for the Roman-British Antiquities;—and up-stairs a new department has been formed, called the "Ethnographical-room," in which are deposited the various articles brought from the South Seas and elsewhere. These are so many instalments of a general plan, which must await the completion of the buildings for its perfect execution.

The Roman station of Burgh Castle, at the confluence of the rivers Yare and Waveney, near Yarmouth, believed to be the ancient Garianonum, has been sold to Sir J. P. Boileau,—as is understood,—the President of the Norfolk and Norwich Archæological Society. This interesting monument is one of the most perfect specimens of a Roman fortress remaining in England; and since it has fallen into such hands, there is good reason to hope that it is intended for preservation. The president of an archæological association disposing of the antiquarian monuments of his county in an opposite sense, would be one of those glaring contradictions which are not to be reasonably imagined.

M. Lottin de Laval has arrived in Paris from his historical and archæologic mission, of nearly three years' duration, in Asia; during which he has explored professionally a large portion of the ancient world. Asia Minor, the Armenias, the country round Ararat, Kurdistan (the Ottoman, the Independent, and the Persian), Upper Assyria, Mosul (where M. Botta was at work), Bagdad, Babylonia, Susiana, Chaldea, Arabia Deserta, Persia from the Indian Ocean to the Caspian Sea, Mesopotamia, and Egypt have severally yielded their archæologic characters to his deciphering. The result is announced to be discoveries valuable to Art, to Philology, to History, and to Geography. M. de Laval brings home upwards of a thousand paintings, drawings, and sketches; and a new process of modelling, of his own invention (to which we have already referred), by which the bas-reliefs and inscriptions of Babylon and Persepolis may be produced with ease and in *fac-simile* for the streets and galleries of Europe.

Last week, the French Academy held its annual public meeting for the distribution of its Monthyon prizes. The award of the literary portion we recorded a week or two ago;—and premiums for virtue and morals, our readers know, are not of the class of inducements which the *Athenæum* approves. In that capital, the ordinance has appeared which institutes the French School in Athens, mentioned by us some weeks ago as being in project. The double object avowed is that of creating for France a body of distinguished literary and antiquarian Hellenists, and disseminating in Greece a taste for the French language and literature. By a provision of this ordinance, young Frenchmen who shall have attained at home the rank of *agrégés* of the University are authorized to open public and gratuitous courses of the French and Latin tongues in Greece; and to profess in the schools and universities of that country, on the demand of the Greek government. They are further instituted a literary commission for conferring the *baccalauréat ès lettres* on the eastern pupils. The School is to be under the supreme direction of a Professor of Faculty, or of a member of the Institute.

The Paris papers, about a month ago, recorded a suicide, which had taken place in the Bois de Boulogne, of a man then unknown;—of whom they have now a melancholy tale to tell. It has been ascertained that he was a poet of distinction in Berlin, named Kaufman,—the translator into his native tongue of the plays of Shakspeare and the poems of Burns. He was a friend of Liszt,—on whose recommendation he had come to Paris: and there, only two days before his death, he had accepted a tutorship in a family of rank. The cause of his fatal act is a portion of the sad poetry of his tale. In the French capital, he had become affianced to a young German lady, whose sudden death had rendered life insupportable to himself. Among his papers, were found two plays in manuscript and the commencement of a translation of Dante's 'Divina Commedia.'—These journals mention that M. Louis Barbie rhas succeeded to M. de Jouy as Librarian at the Louvre.

Some of our readers may know that an Armenian College has been recently established in the French metropolis; and the papers of that capital now announce that Father Yusegi, one of the most distinguished members of the Academy of the Mekitarists of Venice—at whose cost the new institution is founded—has arrived there with forty young Armenians, as pupils. The Mekitarists form one of the most respectable Christian sects of the East; and are subjects of Turkey—under the protection of the Great Powers. The Paris College is licensed to have a press of its own; from which it will publish a scientific Review, in its own language, in order to instruct the Armenians in the progress of the sciences and arts,—and where it will print the most important Armenian works, as well as translations of the classics of Europe.

There have, in the present month, been, or are to be, no less than five congresses of scientific men or artists holden in various parts of Germany;—where it has not yet been considered a sign of wisdom to laugh at such things. At Jena, the meeting of philologists and archæologists, the literary congress at Dresden, that of scholastic professors at Mayence, the assembly of architects at Gotha, and that of the naturalists at Kiel, are so many testimonies to the spreading conviction in favour of these forms of mental association.

The *New York Herald* mentions that Lieut. Maury is engaged, by instructions from the American Government, in the construction of a Nautical Almanac. "The two most celebrated European catalogues of the stars," that paper adds, "'Bessel's Zone Observations,' and 'Struve's Catalogue of Double Stars,' extend only to 15° south of the equator. The Washington Observatory, from its geographical position, can command a zone of 15° farther south,—thus embracing a space of the heavens not within the ken of European observatories. Lieut. Maury will have an opportunity of adding to the catalogue all the stars within this space which he may observe." The Government is recommended to give to this useful undertaking its largest developement, by "ordering the manufacture of a telescope equal to that of Lord Rosse":—but telescopes like Lord Rosse's are ordered much more easily than made.

On the subject of a probable university at Manchester, we have learnt some further particulars relative to the munificent bequest which will serve as the foundation of an institution that is likely, hereafter, to set the true model of a provincial university. The late Mr. Owens, who, notwithstanding his great wealth, led a humble and unexpensive life, had made large provision for his relatives and connexions ere he moved in the wider interests of humanity; having left, we have been informed, a sum not much short of 300,000*l*. After many bequests in favour of individuals, he gives the "residue of his personal estate to trustees, for the purpose of affording to youths of the age of fourteen and upwards instructions in the branches of education taught at the English Universities—free from the religious tests which limit the extension of university education. The trustees for this purpose include the mayor, dean, and Parliamentary representatives of Manchester." While on the subject of Education, we may mention that the Wilderspin Fund has reached an amount of about 1,000*l*.—not one-half of the smallest sum necessary to effect the moderate intentions of those who are the promoters of this well-merited tribute.

DIORAMA, REGENT'S PARK.—REDUCED PRICE of ADMITTANCE.—Now OPEN, with a highly interesting exhibition, representing the CASTLE and TOWN of HEIDELBERG (formerly the residence of the Electors Palatine of the Rhine) under the various aspects of Winter and Summer, Mid-day and Evening; and the exterior view of the CATHEDRAL of NOTRE DAME at Paris, as seen at Sunset and by Moonlight, and which has been so universally admired. Both pictures are painted by the late Chevalier Renoux. Open from 10 till 5. Admittance to view both Pictures—Saloon, 1s.; Stalls, 2s. as heretofore.

ROYAL POLYTECHNIC INSTITUTION.—A CHEMICAL LECTURE, by Dr. RYAN, daily, and on the Evenings of Mondays, Wednesdays, and Fridays. A LECTURE on the ELECTRO-MAGNETIC TELEGRAPH, by Prof. BACHHOFFNER daily. MACINTOSH'S REVOLVING ENGINE, COLEMAN'S PATENT LOCOMOTIVE ENGINE for ascending and descending Inclined Planes. FARRELL'S ARCHIMEDEAN RAILWAY, the ATMOSPHERIC RAILWAY, all in action. HALLETTE'S ATMOSPHERIC RAILWAY VALVE. The OPAQUE MICROSCOPE. The OXY-HYDROGEN MICROSCOPE, exhibiting a fine collection of Living Objects. A beautiful Picture of the CHAPEL in the CONVENT of St. CATHERINE, near JERUSALEM, by Mr. Charles Smith, is one of the New Series of DISSOLVING VIEWS.—Admission, 1s.; Schools, Half-price.

MEETING FOR THE ENSUING WEEK.

TUES. Zoological Society, half-past 8.—Scientific Business.

FINE ARTS

PAINTING ON GLASS.

September.

A paragraph now and then makes the round of the newspapers to the effect that such a one, in Belgium or elsewhere, has discovered some ancient receipt, containing the whole secret of "the long-lost art" of Painting on Glass. Now the fact is, that this secret has been in print (and, I believe, easily accessible) for years:—the only singularity is that, though the receipts are given at full length, artists have failed to recognize what was under their very eyes. These seem to have persisted in prosecuting their researches in a wrong direction,—misled, probably, by the term *Painting* on Glass: which has occasioned them to suppose that the splendid red of the ancient windows (the only colour which they could not imitate) was produced by the old artists by methods analogous to *painting* in enamel. The fact is, however, that the old artists had nothing whatever to do with producing this colour: it was provided for them, ready made, at the glass-house,—in panes, sometimes solid, but generally superficially coated, or *flashed*, as it is called. When, towards the end of the last century, artists began to revive the art of glass-painting, they found little difficulty, save in this one colour,—the splendid red,—which gives such brilliancy to the old windows. Here lay the secret which they were unable to recover: nor were the glassmakers able to assist them,—the art having become extinct among them also.* Within the last thirty years, however, the glassmakers have tried the old printed receipts; and have met with such success, that I suppose nothing but a sufficient demand is wanted to insure the production of red glass in every way equal to the ancient. It is commonly on sale now, both at home and abroad. The whole secret of the "lost art" consists in this:—that, though the *deutoxide* of copper, when melted with glass, gives a green or sky-blue colour, the *protoxide* gives the red in question; which by reflected light is dingy, but by transmitted light beautifully splendid. The difficulty is, that it requires much skill and practice on the part of the workman to prevent the copper, while the glass is in fusion, from taking up the additional dose of oxygen, and thus passing from red to green. There is another part of the secret, which is not a little curious:—that glass, though containing the proper oxide of copper when first taken out of the pot, often shows only a dirty greenish hue; yet nothing more is needed for throwing out the fine red tint than to expose the blown glass for a few minutes to a dull red heat.

I will mention a few books where the methods

* Modern artists, I may observe, have discovered a substitute red, which seems to have been unknown to the ancients,—viz., the red from silver; which, though sometime fine, can seldom bear comparison with the old red

may be found. There is the 'Art de la Verrerie' of Neri, Merret and Kunckel, &c.—Paris, 1752. The Paris Academy, about the same time, published Leviel's 'Art de la Peinture sur Verre;' but it is remarkable that, at that period, Leviel was ignorant of any transparent red whatever,—which he much laments,—and was quite mistaken as to the ancient method. Muratori gives some very ancient receipts for 'Tinctio vitri prasini,'—which I think he attributes to the age of Charlemagne. One has some difficulty in recognizing copper under the name of "*heramen*." Baptista Porta writes as follows, about two hundred years ago,—showing that the method was then in some measure lost:—"Peritiores recentiores vitrarii in colorando smalto rosei clari coloris (vulgus rosachiero vocat), non parum insudant—videntes majores nostros—quod illud satis artificiosè et pulcherrimè confinxerint; nos et quæ ipsi fecimus et ab amicis habuimus recensebimus. Quod potuimus præstitimus aliis ansam præbendo meliora conficiendi. Hic erit modus rosaclerum conficiendi." He then goes on to give his own method,—see the edition in the British Museum, p. 257, cap. ix.

It may be worth mentioning, that French scientific men were so ignorant of the real method, that they obtained, during the Revolution, a large quantity of the red glass from the churches, for the purpose of analysis, at Paris, in the expectation of finding gold. Of course, they found only copper and some iron.

"Mr. Cooper analyzed some pieces of ancient red glass, and found copper, iron, and silver:—hence he concluded silver to be essential. This, however, is not the case; and the silver which he found was either accidental,—or, more probably, he had got among his pieces some of the modern, as well as the ancient, red glass."—*Annals of Philosophy*, Feb. 1824.

FOREIGN CORRESPONDENCE.

Sept.

The Exhibition at Antwerp.—Without going the round of the *studios* (in the best of cases a journey of great delicacy) it is difficult for a passenger-critic to ascertain the amount of talent which may be unrepresented in any given foreign Exhibition. You will accept, therefore, the following for merely what they are:—a few notes on the pictures shown by the "Royal Society for the Encouragement of Fine Arts" patronized by H.M. the King of the Belgians. The visitors, I may add, seem to consider the Exhibition as a superior one.

I believe your correspondent was one of the first who, some five years ago, invited English tourists, then in hot pursuit of the marvels of Munich, to pause a little in this rich country and see what its artists were doing;—venturing the while to claim for the modern painters of Belgium the praise due to a larger nationality in their efforts than the more pretending schools of Rhenish Prussia and Bavaria. Since that time, they appear to me, year by year, to have further *consolidated* themselves into a school,—but a school of their own country. I have not seen in any of their annual Exhibitions a token of their being attacked with that *Antique-Religious-Art*-palsy which makes such strange work with the ambitions of artists born into centuries when Perspective and Chiar-oscuro are understood. A little 'Nativity,' by one of the Düsseldorfers, with a hydrocephalic Child and *loft* of Cherubim above yet more cruelly swollen, looks as strange here as it would do in Pall Mall or Suffolk-street. Religious pictures there are, it is true,—and some outrageous ones. A 'St. Peter and St. Paul,' by M. Tiberghien, are more operatic (if that could be) than the Apostles whom I was admiring, in Canova's Church at Possagno, a twelvemonth ago. But the sanctimonious fancy which has crept into the schools of more philosophical countries seems, oddly enough, to have spared this,—given over as it is, in some respects, to the spirit of Roman-Catholic domination. The Belgian artists are industrious in drawing on their own history;—and, as a body, they have certainly improved in painting since you first made their acquaintance. That disagreeable *waxy* texture to the offence of which foreign eyes in general seem at last beginning to be opened (it being conceded to be something different from Van Eyck's delicious firmness of substance) is giving way to greater freedom and lightness of hand with many of the exhibitors. Nor do they, as yet, show any signs of that audacious slightness in finish by which our painters too often make us pay for their better manner. On the whole, this Exhibition seems to me a step made in the fulfilment of former promise.

M. Wappers, the Director of the Royal Academy here, exhibits two half-length pictures,—the subject of one being Columbus in Prison, of the other Spagnoletto and his Daughter. Both are forcible and fine;—but in both, perhaps, the expression is a little exaggerated. In the one, the caged-eagle look of the Discoverer,—in the other, the despair of the father, almost struck to premature death by his child's shame—touch too closely, it may be, on the melodramatic and the shocking. The colouring is rich,—but with too much of a golden-brown tone. This is rendered all the less pleasant by the manner in which the artist attempts to reproduce in his flesh the blues and pearly greys of Rubens. But Sir Peter Paul harmonized these by setting them against roses and carnations—not against the orange of the wall-flower or the sallow brown of October leaves. I have to complain, too, of a certain lustrous glassiness under pretext of brilliancy,—akin to that which has so seriously hindered our own Rothwell's progress. This is especially observable in the Portrait of a Gentleman by the same artist;—yet, it is the only respectable portrait of man, woman or child to be found in these exhibition-rooms.

M. de Keyser has three pictures, also half-lengths,—an unsatisfactory expedient for conciliating the furniture-requisitions of the purchaser with the historical-ambitions of the painter. One, An Arab, purchased by the King, seems to me as fine in character as any similar subject of Horace Vernet's,—and far better as a piece of colouring. The rich varieties of tone in the drapery are excellently treated. A '*Pieta*' has merit, in the expression of the *Mater Dolorosa*:—The Christ's head being weak, and blameable for that *Carlo Dolce* prettiness which has now passed out of favour save in pious boarding-schools. A fancy portrait of the Count Everhard of Wurtemburg arriving in sight of Jerusalem, has a touch of the right Crusader enthusiasm: though in this, too, elegance seems to have been more aimed at than such self-sacrifice as elevates the strong man above the saint-sick woman. But there are pictures by M. de Keyser elsewhere, far more worthy than any of these three;—and, perhaps, in this Antwerp Exhibition, his merit is best asserted by the works of some of those announced as his pupils. A picture, entitled 'Regret,' by M. Swerts, pleased me; though merely the well-known combination of the young nun who had embraced her cloister life too young, and the elder sister who, having conquered all earthly repinings, can still allow for them in those less used to the vigil and the cell and the grated door. 'Les Margueurites' is a "conversation piece" of lighter import,—but very pleasant. There is a picturesque design, too, by another of M. de Keyser's pupils, M. Wittkamp, 'A Pilgrim presenting to the Lady of a Crusader an Urn containing the Heart of her Lord,' containing good composition, natural expression, rich colour and firm painting: and—though the picture fail as a performance of the first class, from a certain tendency towards the theatrical, to be felt better than described—as a promise, it is full of significance of the best kind.

M. Eeckhout exhibits a jolly sportsman's revel; which it has pleased him, somewhat affectedly, to style 'Le Champagne Mousseux.' These be no sportsmen of the class which our own Landseer has made classical; but what may be called "dressy" gentlemen in moustaches, dark velvet jackets, and that array of "conveniences" which no one of Col. Hawker's disciples ever brought himself to use. The senior has his thumb on the neck of the bottle—the junior his arms round the waist of a buxom Maritornes, while an old *manant* in a *blouse* stands by placidly acquiescent; and the foreground is made up of dogs and dead game, with more of *terra-cotta* in their texture than of fur and feather. *Costume* predominates over "true sport" in this picture;—gay shooting-jackets and flaunting *sombrero* hats being easier to paint than free life on the wolds (hills our friends have not). Accordingly, these seem in favour here, as subjects. A version of the fireside joke "Guess my Name," by Haesert, owes much of its attractiveness to the above-mentioned properties. These are both capitally painted; and worth, in my poor judgment, acres of such monstrosities as the gigantic 'Combat from Homer,' by M. Wiertz, or the 'Madness of Don Carlos,' by M. Kremer,—huge gallery pictures, almost as bad as huge.

The Government gave a commission to M. Guffens to paint, for the town of Hasselt, the Enfranchisement of that place, by the young Count de Looze, on the occasion of his marriage. On the whole,—since the subject must, necessarily, save in most masterly hands, become one of costume rather than character,—the painter has treated it well. There are a fair share of liberality and loyalty in the gentle and simple contracting parties—due regard for the Monk, who, in the thirteenth century (the time of the transaction), was never far out of the way—and due courtesy shown to the Lady, whose especial province it was in those days to be mediator. Yet, sooth to say, I remember best her straw-coloured damask robe and the excellently painted mail of her consort!

Descending a step lower in the scale of subject—we come upon the real strength of the modern painters of Belgium. M. De Block, though not so clear, this time, in his air as I have seen him on former occasions—M. De Braekeleer, whose 'Fisherman's Orphans' would be a capital addition to any gallery whatsoever of cabinet pictures—M. Vennemman the younger—M. Knudden—M. Adolf Dillens—M. Van Schendel, whose 'Market by Lamplight' may be praised while Schalcken is thought of—M. Van Regemorter, whose 'Boors quarrelling over Cards' has much of Brauwer's brutal bustle—M. Linnig, in right of his picture of 'A Fair'—are all worthy of high praise;—inasmuch as genuine popular life, treated in the true humour, is better than affected spirituality. An Interior of a Robbers' Tavern, by M. Molyn, of Antwerp, struck me yet more; as being less laboured, very spirited in composition, and happily coloured—though the tones be of the darkest. In an English Exhibition this picture would be passed over as *inky*—owing to contrast, (I say this expressly remembering the judgments passed on certain Belgian pictures at our R.A. Exhibition); yet I know no English artist who could do the same thing so well,—Cattermole always excepted. A separate word, too, is claimed by a picture called 'The Organ-Player,' by M. Van Hove the younger—a Dutch artist. It was not well done of him to make the music-master one of so shabby a presence—and time can hardly blacken his shadows: but the St. Cecilia who is sitting at the instrument comes very near to one of the singing ladies of Metzu; and, though the shadows are too intense, the quaint old chamber—rich in picturesque objects—is so full of light as to remind me of De Hooghe. A contribution from M. Docker of Worms (not specified in the Catalogue,) of Gleaners,—with a strong reminiscence of Leopold Robert, and a liberal use of that flame-coloured sun-set glare which, to judge from half-a-dozen contributions here, seems the favourite German key,—attracted many gazers.

It is strange, but true, that, excepting in Winter and in Water scenes, this Exhibition is miserably poor as regards landscape. I had made acquaintance in London with M. Waldorp's peculiar fancy for scattered clouds and scattered shadows on the water:—possibly he has reserved his best efforts for the coming Exhibition at Amsterdam. The Snow pictures of M. Moerman, (with a word of protest against the vivid green of his fir-trees), M. Pieterszen, M. Witterronghel, and others are marked with notes of admiration in my catalogue. M. Gudin—surely not *the* Gudin—contributes a landscape, in which Turner's hazy indistinctness seems the thing aimed at. The effect of this *here* will readily suggest itself to those who are acquainted with the positive and heavy treatment of Nature general among foreign landscapists. I must close with a word to the credit of M. Mozin, of Trouville;—whose two pictures, nevertheless, are so audacious, attempting the most unpaintable aspects of earth, sky and water, that I hardly know whether many will admit praise to be deserved. But this very boldness makes me wish to record his name:—curious to see whether, in his case as in our own Mr. Anthony's, it turn out merely a singularity in selection, or whether he shall ultimately prove to have desired to extend the powers of his Art. These are days in which some eccentricity may be borne with, for awhile—in the hope of originality.

P.S.—In postscript, let me regret that the beautiful old city of Bruges is spoilt by the least satisfactory of modern statues abroad or at home. This is saying much;—yet not too much in reference to the effigy of Simon Stevin which was inaugurated there some weeks ago. The artists, MM. Vanwedevalt and Derre (I know not which is the designer) seem to have forced every trait of a fine old man's countenance, and forgotten the proportions of the human figure. The hands are enormous. The beard is set out upon the middle-age ruff with a formality which gives the statue, as seen from behind, an air almost grotesque. The drapery is coarse in its folds where amplitude was intended. Really, the S. P. Q. B. (thus classically have the authorities chosen to inscribe their style on the pedestal) have been more than ordinarily unlucky! I remember St. John Nepomuks by the dozen, and St. Christophers by the score, in little German towns—the products, possibly, of no more sublime *atelier* than the yard of the church stonecutter of the district—worth their weight in copper gilt as compared with this poor graven image. Yet Bruges is one of the last places to tolerate the presence of inferior Art!

Fine Art Gossip.—The Society for the Suppression of Vice, like some other societies and a great many individuals, is fond of doing its work in the wrong places. Daily overlooking a hundred offences that stand conspicuously soliciting its attention at every turning (and the neglect of which throws doubt and discredit on its purposes and constitution), it has gone out of its way in search of a fanciful illustration of both—and actually petitioned, it is said, the Royal Academy to abolish the practice of *study from the life*. There is something so ingenious in this piece of folly—it shows so fine an understanding at once of what Vice *is* and what Art—that its authors are at once recognized by it as the fit men for their delicate functions. Theirs is the philosophical and transcendental treatment of the subject. The vice that walks in the sunshine and stands right between the wind and their moral nobility may be left to more common scavengers, while they go in fantastic search of that which may hide in possible corners or lie under fair pretences. A less refined police may deal with facts—their business is with problems. While there is so much dirt everywhere about which they contract to remove, who would have expected to see these moral dustmen shouldering their brooms to sweep out the Academy? The most curious fact of this business, however, is that which directs the petition to the Academicians themselves—requests the national conservators of Art to be so good as surrender its materials. It would not be more absurd were the Academicians to petition the members of this Society to set up a public gaming-table in their office! This and other "suppression" associations may be assured that they cannot divert the public regard from those duties which they overlook by an occasional bustle in questionable directions. One of these bodies, after years of "study from the life," can scarcely yet detect practically the figure of Cruelty out of the person of a costermonger;—and another, after seeking Vice all over London with a pair of patent spectacles made to a peculiar focus, has suddenly caught a glimpse of it through the stone walls of the Academy!

We continue to receive a variety of communications from members of the Institute of the Fine Arts,—taking several sides of the questions by which that Association is divided: but these have now degenerated to a personal squabble, in which Art and they who wish it well have no interest. A spirit at once so idle and mischievous as that which has got within the walls of the Institute is not to be exorcised by argument or appeased by the appeal to decency. Through proceedings so disgraceful we see no issue for the earnest and well-disposed portion of the members but a dissolution of the body and a careful reconstruction. We have the case before us in all its particulars, as furnished by both parties; and have nothing to renounce of the view which we originally took, save only the hope of a return to good sense and feeling that then made a part of it.

The process of the restoration at St. John's Gate, in Clerkenwell, affords a creditable example of a worthy purpose steadily pursued amidst great discouragement. The subscriptions come in with a slowness that is remarkable in an age when the practical part of the antiquarian spirit is so widely awakened, and in a metropolis that boasts two archæological societies. At present, the whole amount reached is only 130*l.*; and each trifle subscribed is at once applied to the work, with a patience that shows the earnestness of the Committee and a perseverance that speaks their faith in its final accomplishment. "If only 5*l.* be received occasionally," say they, "a new label or window-head will be provided." The following restorations have been already effected in the north front:—"The two towers and the upper portion of the gate have been recased with stone—rough, to accord with the present stonework, new solid stone embattlements, and new solid stone window-heads, jambs, and sills to the turret windows. In addition to these restorations, the red chimney-pots have been taken off, and new ones, more in accordance, have been substituted; the unsightly door-front, in the Roman style, has also been removed." About 90*l.*, the Committee add, will restore the stone embattlements to the south front; and whilst "the minor details can be completed from time to time," these, they observe, "ought to be immediately restored to the south front,—which will give a decided character to the north front, now nearly restored."

The Doncaster cup for the present year is the work of Mr. Alfred Brown;—and represents Lord Clifford, of Cumberland, overthrowing Richard, Duke of York, at the battle of Wakefield. The subject is so far appropriate as illustrating a passage taken from the history of the county in which the prize is to be competed for;—and, further properly chosen as involving the illustration, by Art, of the noble animal employed in the competition. Like other specimens of their art produced by the Messrs. Hunt & Roskell, this work has had the benefit of Mr. Baily's superintendence.

The Wellington Statue will, we understand, be erected on its *experimental* pedestal in the course of a few days. As forty horses are required to drag it to the place of this experiment, and a power proportionate to lift it to its elevation, we have no idea that "all the king's horses and all the king's men" will ever get it off again.—Some further move seems making, too, with the Nelson Column; but that has ceased to be an object of interest with the present generation,—who have bequeathed their hopes of ever seeing it completed to their children, with a reversion over.

In addition to the Velasquez which we, last week, mentioned as having been purchased for the National Gallery, the acquisition has been likewise made, by purchase from Lord Dartmouth, of a small picture by Annibal Caracci, called the 'Temptation of St. Anthony.'—We may repeat, to save some of our readers from disappointment, that the National Gallery is closed till the 20th of October.

In France, the Fine Arts have sustained a loss by the death of M. Théophile Lacaze, the painter, at the premature age of 44.

The French inhabitants of Cairo have just placed on the terrace of the house where Kléber was assassinated a granite column supporting a bust of the General, with the following inscription:—"Jean Baptiste Kléber, General-in-Chief of the army of Egypt, born at Strasburg in 1754, died in this house, June 14, 1800." Below the inscription, is a medallion bearing the names of the victories which the General had gained.

On a recent visit to Canterbury, we were pleased to remark the vigour with which the restoration of St. Augustine's Monastery is prosecuted. It is only three years since public attention was called to the disgrace of suffering the desecration of these noble ruins to the purposes of a pot-house. It was then suggested that the clergy might relieve the ruins from their debasement and convert them to educational uses. The hint was taken; and reduced to practice mainly by the earnestness of Mr. A. Hope. Funds were subscribed;—and it was resolved to convert the old Monastery into a college for missionaries in connexion with the Established Church. The design has been to preserve as much as possible of the ancient buildings; and then add others which might be requisite of an appropriate architectural character. Of the old buildings little remained but the beautiful decorated gateway—and the chapel, of yet earlier architecture. These have been carefully preserved, and are connected with other very extensive ones—dormitories for the students, hall, library and master's residence. The materials used—which are indigenous to the locality, and therefore especially appropriate—are hewn flints, with stone dressings. The workmanship is substantial and thoroughly honest. There is not a bit of pretence anywhere—not a timber used which is not of genuine oak. The sentiment of the buildings struck us as collegiate and appropriate:—not novel indeed, but an excellent expression of Mediæval style.—The restorations have been intrusted to Mr. Butterfield; and his work does him credit. If the works proceed rapidly as hitherto, the buildings will be entirely roofed in before Christmas. We were glad to see that there is a likelihood that the decoration of the interior will not be neglected.

We borrow from the *Builder* the following particulars relating to a hitherto unknown architectural author, François de Hollande.—Count Raczynski, of Berlin, previously known by his writings on modern Art, has, on searching the Library of the Jesuits at Lisbon, discovered the MSS. of the above artist,—a contemporary and friend of Michael Angelo and other great men of that period. F. de Hollande is called in these MSS. *architecte et enlumineur*. Amongst them is a dialogue, which took place at Rome, between F. de Hollande, Michael Angelo, Victoria de Colonna, and other celebrated personages of the time. Another very curious work is an official report, made to King Sebastian, 'On the Utility of the Art of Design in a Christian Republic, as well in time of Peace as in War.' The following passage, extracted from a chapter on the utility of design to a monarch, might nigh induce the belief that F. de Hollande had some glimpses of the discoveries of Lavater and Gall, even in the 16th century: "One of the reasons why the king ought to know how to draw is, that thereby he will become aware of the character of the persons he has to employ, as exhibited in their physiognomy. This will enable him—a thing certainly very useful and important—to distinguish in his council, according to their features, the men whom he has to choose as viceroy of India, or for an ambassador, &c. He will, also, thereby avoid the making a man a captain who is but suited for a groom."

MUSIC AND THE DRAMA

NEW PUBLICATIONS.

Instrumental Music.—*Premier Quatuor, pour deux Violons, Alto, et Violoncello.* By J. B. Nadaud.—A good Quartett for stringed instruments becomes a *very* good work where its author has no more substantial musical office than that of beating time while Perrots dance and Ceritos execute impossibilities in the air. It is the man, however, who makes his place,—as we have seen signally exemplified in the career and position of Signor Costa; and henceforth, M. Nadaud may claim far higher rank than such as attaches to the musical conductor of the ballet at Her Majesty's Theatre. This Quartett is thoroughly well-written, rather than very imaginative. M. Nadaud is clear of the propensity common to many composers of the modern French school—who appear unable to resist bringing the rhythms of the *cabaletta* and of the *pas de trois* into grave works,—wherein measures so piquant and yet mechanical become impertinences. Let us instance the works of M. Félicien David,—that clever, but most irregular, writer, M. Schaffner, of Bordeaux,—and, at the risk of surprising every one, M. Berlioz himself.* There is not a trace of Gallic *light-footedness* in the work before us—a great merit;—but there are agreeable melody and clever management of the several

* This brilliant writer—we wish we might add, sound critic or consistent thinker,—has, in print, so perpetually Quixotized against commonplaces of form, that it becomes needful to insist on what, stated briefly, might be mistaken for a slip of the pen or—one of his own paradoxes. However the first ideas of M. Berlioz be swathed, or clogged, or embroidered, by his picturesque, or pompous, or eccentric fancies of instrumentation, we have not perused a single work of his in which the thought might not be *transcribed* (as the phrase is) for the use of the opera singer or dancer. That the melodic phrases of Mozart or Beethoven, in their chamber or orchestral works, could not be thus treated, is a threadbare fact—though the attempt *was* made, at the *Académie*, to concoct a *ballet* for 'Don Giovanni' from its composer's quartetts.

parts and several instruments. We like the *finale* least,—but this is, of all movements, the one most difficult to make interesting; *vide* the writings of inventors far more experienced than M. Nadaud—Spohr, Onslow, and others whom we could name.

Though life perhaps, has grown too short for sonatas, duetts, trios, unless they be "the best of the best," Art is too long for us to permit so clever and fanciful a writer as M. Stephen Heller to trifle his prime away in such works as his 52nd and 53rd—a *Venitienne* and a *Tarentelle*. Had he no more than the average science and taste which set up the Fantasia-mongers of our day, we would take these very graceful things for what they are—and be content. His *Tarentelle* may be classed, for its spirit, with Auber's in 'La Muette,' with Rossini's in his 'Soirées,' and with those real Neapolitan tunes (including our favourite *Calascionata*) which Liszt has grouped so fantastically and plays with such incomparable spirit and elegance. As regards composition, it may be praised as superior to Döhler's and as almost equal to the *Tarentelles* of Moscheles and Chopin. There is, however, too obstinate a persistence in one figure (*vide* pp. 14, 16, &c.)—and herein lies the seduction and facility of *Tarentelle* and *Valse* and *Polonaise* and *Bolero* and *Mazurka* writing; since, so long as the fiction of the dance going on is kept up to the ear, the air of construction is maintained. We should have passed this over, but for the still more glaring example of the same artifice which occurs in page 7 of *La Venitienne*. This, though used, we are aware, to prepare the ear for the tantalizing dislocation of the rhythm in the following page, is not composition—but *trick*; and, as such, unworthy of M. Heller. We wish he would "gird himself like a man" to something more serious than *bagatelle*-work like this. Even if success in such trifles were not calculated to spoil a composer,—as we see, unhappily, in the case of M. Chopin,—the quantity in which they are now put forth becomes almost surfeiting.

We have been turning over a heap of music by another new foreign candidate, M. Schulhoff,—with but little gain therefrom. A *Scherzo* (No. 7) promises well, at its outset: but what may be called the *trio* in the major key reveals "the nakedness of the land"—the want of sustaining and constructive power; while No. 1 of '*Les Mandello*,' four *Mazurkas*, consists merely of two slow *valses*, not strong enough to go alone, and therefore dished and dressed up with *appoggiaturas*, hand-crossings, melody put in the bass,—every expedient, in short, by which shadow can be made to pass for substance. Composers who begin at this point are apt to end far below it. Though it be generally true, as M. Fétis has acutely observed, that "there is an originality in music which is the result of meditation and experience," we have a right to expect skill and science, not sleight of hand, from those who call on us to accredit them; nor can we be persuaded to sit patiently listening to nonsense, however piquant, till we have a certain well-founded faith in the sense of the speaker.

A very interesting packet before us is from Edinburgh: the composition of a German Professor of Music resident there,—whose name, we apprehend, will be as new to most of our readers as it was to ourselves. It consists of a *Sonata for pianoforte and violin*—*Four Songs for a single voice, with violoncello obligato* (to translate the German title)—*Six Songs dedicated to Dr. Mendelssohn*—*Two Songs*—*Songs and Ballads, &c. &c.*—*and Six Songs for four male voices*, by J. Dürrner. It is, in short, a true German offering; various, carefully finished, and thoroughly worthy of hearty Scottish and English welcome. In these days, it is something to make acquaintance with a composer whose fancy it is to be clear, melodious and not difficult of execution. The Duett Sonata has all these merits; besides possessing that *savoir faire* without which few Germans publish, however copiously they may write. The *allegro* and the *rondo* display a vigour and simplicity of idea eminently worthy of praise:—the theme of the *rondo* is new, expressive, and elegant. The weakest movement is the *adagio*: but just now, this feebleness seems to be epidemic—the tendency of modern composers being either to run into a flimsy accompanied *cantilena*, or, under pretext of modulation, to become intolerably crude and tedious. Herr Dürrner's vocal compositions, however, are better than his instrumental ones. In particular, the first and second of the six songs dedicated to Mendelssohn may be recommended—the second, 'Am Bach,' as full of grace and tenderness. The whole collection may be placed next the *lieder* of Schubert, Mendelssohn, Lindblad, and Dessauer, without injurious contrast.

We must close the present notice by mentioning some slighter ware. First, some graceful ballads,—*Dear Italy—Dear Scenes of Happier Hours—Take Back thy Gift—Forget-me-not*, &c. &c., by Mrs. G. A. à Beckett. A *Fantasia* on the tenor and bass duett and the *pas de double* from 'Guillaume Tell' by Edward Wolff, and a *Rondo* from a theme of Auber's 'Serment,' claim no longer notice—being, both, slightest of the slight. We are sorry to have to speak more explicitly of a cheap publication in fourpenny numbers,—six of which are before us. This is the *British Harmonist*,—a bad collection of glees, madrigals, canons, rounds, catches, sacred choruses and anthems. Our disparagement is fully warranted by the confused manner in which all the accompanied compositions are printed, and by the liberties taken with the greatest masters;—*vide* the mal-treatment of the 'Quoniam' and 'Benedictus' from Mozart's Twelfth Mass, part 6.

FOREIGN CORRESPONDENCE.

The Organ at Haerlem.—Placed by some competent authorities among the Seven Wonders of the World as the Haerlem Organ has been—described by many a guide and tourist in the most flowery of phrases—few travellers who have enjoyed a large experience of a certain style of "lions"—palaces, clocks, waterfalls, "English gardens,"—will wonder why it was felt a duty rather than a pleasure to halt betwixt the Hague and Amsterdam for a hearing of this ill-used instrument. I was repelled, in short, by the often-repeated enumeration of its trumpet, and harp, and thunder, and cuckoo stops;—would rather have kept out of the way of "the storm," by which the organist concludes his private performance, than otherwise. False friends and foolish praise have much to answer for;—and seldom more than in regard to Christian Müller's masterpiece.

The "statistics" of this great instrument are well known to your musical readers:—how it has three ranks of keys, sixty stops, twelve bellows, five thousand pipes, &c. &c. They have heard, too, again and again, that the York and Birmingham organs surpass it. So they do in dimensions; but with regard to the latter instrument, at least, there is no more comparison betwixt the two than between Mr. *Every One's* very good violin, on which he performs his orchestral duty bravely, and *the one* Cremona or Steiner, whichever that may be, which a Paganini will give his three best diamond snuff-boxes to purchase. Size and scale, of course, are admirable in the means of variety they impart to an organ: but I take it that perfect balance and evenness of tone are better; and that the instrument, where the pedals are not of too overwhelming a strength, nor the mixtures of that ferocious brassy shrillness which excruciates the ear in the French organs,—where the foundation stops are sound and sweet, without wheeze or woodenness, and the embroideries, or *solo* stops, voiced so as to be agreeable to their very topmost notes,—will carry off the palm over mere feet-and-inch monsters; and this in right of power as well as of pleasantness. When proportion in a structure composed of so many small parts fails, the effect is often weak and disappointing in direct ratio to the size. Thus, one or two of the Silbermann instruments at Dresden, and Chrismann's delicious organ at Mölk, on the Danube, though smaller than those above cited, are more admirable for their lustre and mellowness and grandeur of tone, so far as I can compare,—making allowances for position and the mellowing influences of Time. All honour to them, and no dishonour to our own organs! but the Haerlem instrument has, as yet, no peer; unless it be at Fribourg, in Switzerland, in the one built by Mooser, and—to its disadvantage—so fantastically described in the 'Lettres d'un Voyageur,' of George Sand.

The musician, however,—as distinguished from the curiosity-monger,—is not allowed to hear this Haerlem organ to advantage. A great professor is sadly wanted to make its pipes speak. The young man who exhibited it for us knows its stops and their combinations,—how to bring in the *carillon* so as to surprise the ladies to utter the burden of Mrs. Fugleston's song, "*O la! soft bells!*"—how to show off the intensely deep sound of the double-bass pedal notes—the deepest, a miserable mimicry of real thunder,—how to play one *cornet* variation, another on the flute, and so forth,—but his hand is weak upon the keys; hence a perpetual unsteadiness, making one long for the firm grasp of Schneider of Dresden or Mendelssohn. He is, also, an awkward and timid pedalist. That full sound of the instrument, for the amplification of which to the highest climax Sebastian Bach so incomparably provided in his fugues, never gratified the ear for two seconds together. He performed a fugue, it is true,—but in only a slovenly way; and the puppet-show exhibition at last—though quite the "nicest part of all," as a countrywoman of mine exclaimed aloud—played me out of church in a very bad humour. It may be owing to the organist's inefficiency that I fancy the pedal pipes in combination with the full organ hardly rich and powerful enough in support. With regard to this, I should be glad of more competent testimony: as to the glory of the full organ—the softness and mellowness of the choir—the total absence of any of those peculiarities which suggest to the ear tin, or wood, or pewter—and the poignant and *talking* clearness of the reed stops—there can be no mistake. I wish the Guide-Book editors would get some really fine organist to play upon it, and another to write the account; that the many may not be disappointed "because the earthquake was not nearly so imposing as they had fancied,"—nor the few, owing to apprehensions that such tom-foolery *ad captandum* was provided by the maker and not invented by the exhibitor, kept away from one of the noblest objects of a musical pilgrimage.

There has been much danger of a barrier being built round the Wonder of Haerlem by extortion as much as by unintelligent rapture. Bound to exhibit the instrument in private for a fee of thirteen guilders—a guinea and eightpence,—the organist has, of late, shown symptoms, I am told, of attempting double charges on the occasion of a second party joining the first who has bespoken the performance. The case has been "had up" before the Burgomasters—and the tariff officially confirmed as above, without reference to numbers. To make inaccessible the "Lion" of the prettiest, cleanest, and quaintest of Dutch towns which a pilgrim can "put into" on a fine September day, would be more suicidal than sensible in the men of Haerlem. But "what shall we say?"—as the Easterns have it; how hope to kill this Hydra-love of filthy lucre? There is no escaping it. Whenever it engenders meanness, however, in English travellers, let the English traveller record the offence. I must not mention the Haerlem organist's rapacity, without also recording an instance of British vulgarity, to shame those who may have like notions of "getting on" from putting them into practice. We were a miscellaneous party,—one section of which consisted of two English (by courtesy) gentlemen and as many ladies. When the commissioner went round to collect the organist's *honorarium*, and began to count heads, one of these persons (I heard it) desired him to ask the stranger gentlemen of the party *to treat the ladies!* It was done. The economy thus effected amounted to some two and sixpence: but there were foreigners in the gathering,—and it was humiliating to see my countrywomen degraded in their eyes for so paltry a sum. The offence, in itself, were hardly worth recording, but that it is the aggregate of such coarse and shabby self-assertions, which is doing grave mischief to the character of the English away from home.

Let me close this with a word more harmonious. Throughout Holland, I have been surprised at the prevalence of part-singing. At the Hague I came upon more than one happy family party, singing quartetts by heart, while sitting, on these glorious evenings, before the coffee-houses in the Wood; and last night was enchanted by three girls strolling, arm in arm, homeward down the street,—singing a fresh and curious melody, in three parts, with the sweetest female voices I have heard for some time. The Dutch ought to have great vocalists and good composers for voices, if these be ordinary phenomena.

SADLER'S WELLS.—Miss Laura Addison has, at length, been permitted to essay her strength on the Shakspearian bow; and has so far succeeded as to justify us in confidently affirming that she is an actress of no common powers and of considerable judgment. The play was 'Romeo and Juliet'—the heroine being acted by the young lady alluded to, and the hero by Mr. Cresswick. Both performers are great acquisitions to the London stage. We were particularly pleased with Mr. Cresswick's *Romeo;*—which was, throughout, chastely conceived and executed without exaggeration. The poetry, however, was better preserved than the passion of the character;—and in the great scene with the Friar in the third act we missed that agonizing emotion to which we have lately been accustomed. The judgment and reason were appealed to rather than the seat of the affections in the throbbing and almost breaking heart; still there was a manly bearing, which, without depriving despair of its vehemence, lent it dignity and support under the pressure of almost intolerable calamity. The love of *Juliet*, as depicted by Miss Addison, was, in the early scenes, almost girlish in its innocence—in the later, most maidenly in its impetuosity. As the drama increased in its demands on her energies, she gradually rose to passion,—grew into decision of purpose and strengthening form of character. The scenes with the nurse were enchantingly played; and when she finds that the "ancient iniquity" is no longer to be trusted, her "Amen" and "thou hast comforted me marvellous much" were delivered with that solemn and mysterious emphasis which becomes the situation. Thenceforth, Juliet must act for herself. Miss Addison evidently felt the responsibility of the new position; and assumed an attitude of determination, accordingly. At once, she attained to maturity. No longer the minor, the maiden,—but the wife and woman,—she must now assume an independence of character, and resort to such measures as may most effectually meet the present extremity. The joyous and confiding girl, previously all truth and straightforwardness, suddenly diplomatizes, submits to duplicity, dares the perils of falsehood and death itself, to preserve the chastity of a plighted and irrevocable love. All this was beautifully delineated. But then comes the dreadful chamber scene, which Juliet "must act alone";—a scene which is the test of an actress's powers—in which many a Juliet, successful up to that point, has excited ridicule in place of sympathy. This soliloquy is, in fact, one of the most difficult passages in the entire drama. Miss Addison divested it of all its conventionalities; conceived it in a mood and a style perfectly original; contrived to live, as it were, so naturally and unaffectedly in every line,—suffered the horrible imaginings so progressively to accumulate upon her mind,—that all those exaggerations of manner which are usually permitted to change the sublime into the ridiculous were not even suggested. The climax of the action was reached without a leap; and the most powerful effect produced without any sacrifice of discretion and taste. In a word, the scene was an artistic triumph.—Mr. Phelps has produced this play with unexampled propriety. With such care and originality has the whole of the *mise en scène* been disposed, that there is scarcely a situation in which there is not some novelty and felicity of arrangement to admire. Nearly all the passages usually omitted from the original text are restored—and the vindication which they present of the poet's superior judgment is complete. There is not a single instance in which these restorations do not give probability to the motive, and aid the developement of the character. The final scene in the monument also strictly obeys the implied stage directions in the text. The body of *Paris* is conveyed into the vault by *Romeo*; who never afterwards leaves it. Therein, the remainder of the action is, also, concluded. Juliet is awakened, but never comes forward—dying beside the tomb on which she had been sleeping. The picturesque effect of all this fully justified the poet's conception;—showing how much wiser he was than the players have hitherto been. Mr. Phelps himself performed *Mercutio;* giving to the Queen Mab speech an entirely new reading—not making a set version of it, but blending it familiarly with the dialogue. He was deservedly applauded.

LYCEUM.—On Monday was produced a new drama in one long act, entitled, 'To Parents and Guardians.—At Jubilee House, Clapham, young gentlemen are, &c. &c.;' and devoted to the freaks and fancies of schoolboys. *Monsieur Tourbillon* (Mr. Wigan) as the resident Parisian usher, an emigrant nobleman in distress, is the victim of the mischievous lads, *Master Robert Nettles* (Mrs. Keeley) and *Master William Waddilove* (Mr. Keeley). The latter is a "slow coach;" but, stimulated by his livelier companion, gets into "lots" of mischief. The obvious humour of the situations may be easily imagined. The tricks, however, are, perhaps, somewhat too numerous and too much elaborated. Mrs. Keeley was inimitable. Mr. Wigan's sentimental and perplexed Frenchman was highly amusing. The piece met with deserved success.

MUSICAL AND DRAMATIC GOSSIP.—A prolific French writer, M. Ymbart, has died recently in Paris. It is stated that, since the year 1817, he has added annually from three to five farces to the *repertoire* of the Paris theatres.—The fate which the American papers had assigned to Van Amburgh is now admitted to have been, at least, prematurely announced.

The Philharmonic Societies of the Circle of Rezat met, in Furth, on the concluding two days of last month, to the number of 600 executants, for the celebration of their annual singing Festival.—The Second Grand Festival of the Belgian-German Lyric Confederation will take place at Brussels on Thursday and Friday in next week; and the Central Committee have announced, as an inducement to foreign societies, that the members will be conveyed gratuitously by railway to Brussels and back, and that a commission has been nominated to the especial duty of taking care that the cost of living there shall not exceed from three to five francs a day for each.

MISCELLANEA

Paris Academy of Sciences.—Sept. 7.—M. Natali Guillot read a paper on the construction of the liver and its functions in different animals;—and M. Blaudet one on the mechanism of the human voice.—Communication was made of a letter addressed to M. Arago, giving an account of the recent earthquake in a portion of Italy.

Sept. 7.

"Hamlet" with Hamlet omitted.—A recent number of the *Athenæum* repeats the millionth echo of that vulgar error, "Hamlet without the part of Hamlet." Allow me to say a word upon the subject in a publication so characteristically distinguished for common sense. Every one who opens the drama in question with a view to this point will be satisfied, that to act "Hamlet without the part of Hamlet" is an extravagant absurdity,—not to say an impossibility, which never entered into the head of any stage-player in the world. Whence, then, arose the story? I believe it owes its origin solely to the equivocal syntax of the play-bill, interpreted by Dugald Stewart's philosophy. A poor actor endeavours to get up the play of Hamlet in a country town: but he is aware that virtuous matrons will be scandalized at certain parts of it, and will not bring their daughters to listen to *double* (or single) *entendres*. The indelicate passages are especially to be found in the parts in which Hamlet and Ophelia *converse together*. And, as these form no considerable nor essential portion of the play, he applies the scissors, and announces in the play-bill, that Hamlet will be acted "*omitting the parts of Hamlet-and-Ophelia:*" meaning the parts in which they act *conjointly*. So the play-bill was first quoted by Dugald Stewart (to whom, if I remember rightly, we are indebted for the story); and he, looking at it in a philological rather than in a practical point of view, accuses the provincial Roscius of omitting the *part of Hamlet*, and the *part of Ophelia*:—not considering, that he was far more likely to write an ambiguous advertisement than to be guilty of so gross a practical absurdity. In the present proverbial use of the story it is usual to drop all mention of *Ophelia;* and thus to deprive the poor actor of the benefit which he would, doubtless, derive from the plain practical sense of readers who are no philosophers. W. N.

The Old Palace of Bridewell.—A few days since, as the workmen were excavating on the site of Cogers' Hall, in Bride-lane, they came to a vault or dungeon belonging to the Old Palace of Bridewell, which, in the reigns of William I., John, and Henry III., was used for holding their courts. Stowe makes mention of this place as extending from the Thames nearly to Fleet Street. The portion laid open, and now totally destroyed, consisted of a series of six groins, of elegant construction, supporting the roof of the apartment, thirty-four feet long and seventeen feet broad, on the west side of which was discovered a window, completely blocked up with rubbish. In the rubbish was found a leaden bull of Pope Nicholas V., a small jutton or abbey piece, besides pottery, glass, and tiles, all of early construction, with human bones, as well as those of animals.—*Church and State Gazette.*

National Gallery.—From a Parliamentary paper lately issued, it appears that 456,105 persons visited the institution in 1843; 681,845 in 1844, and 696,245 in 1845. Mr. Baring Wall moved for a return, which was recently printed, "of all pictures purchased for the National Gallery, distinguishing each and the year when purchased; stating by whom painted, the sums given, and out of what collection." It seems that 114,804*l.* 16*s.* has been laid out in pictures from 1824 to 1845, of which sum 57,000*l.* was paid by Parliament for one lot, consisting of thirty-eight pictures, out of the collection of Mr. Angerstein. For the following twenty-seven pictures the remainder of the sum (57,804*l.* 16*s.*) was paid:—'The Holy Family,' by Correggio, 3,800*l.*; 'Bacchus and Ariadne,' by Titian,—'Christ appearing to St. Peter,' by Annibal Caracci,—and a 'Bacchanalian Dance,' by N. Poussin, 9,000*l.*; 'Mercury teaching Cupid in the presence of Venus,' by Correggio, and the 'Ecce Homo,' by the same master, 11,550*l.*; 'Mercury and the Woodman,' by Salvator Rosa, 1,680*l.*; 'The Holy Family,' by Murillo, and 'The Brazen Serpent,' by Rubens, 7,350*l.*; 'St. Catherine,' by Raffaelle,—'St. Francis adoring the Infant Christ,' by Mazzolino de Ferrara,—and 'The Holy Family,' by Garofalo, 7,350*l.*; 'St. John,' by Murillo, 2,100*l.*; 'The Magdalen,' by Guido, 430*l.* 10*s.*; 'The Virgin, Infant Saviour, and Saints,' and 'The Dead Christ, &c.,' both by Francia, 3,500*l.*; 'The Virgin and Child,' by Pietro Perugino, 800*l.*; a subject not ascertained, by Van Eyck, 630*l.*; 'An Apotheosis,' by Rubens, 200*l.*; 'The Doge Loredano,' by Giovanni Bellini, 630*l.*; 'A Jewish Rabbi,' by Rembrandt, 473*l.* 11*s.*; 'The Young Christ and St. John,' by Guido, 409*l.* 10*s.*; Gerard Douw's own portrait, 131*l.* 5*s.*; 'Lot and his Daughters,' by Guido, 1,680*l.*; 'The Judgment of Paris,' by Rubens, 4,200*l.*; a Portrait (not ascertained by whom), 630*l.*; and 'Susannah and the Elders,' by Guido, 1,260*l.*

Copper Rock.—A letter addressed to the *Detroit Advertiser*, gives the following account of a most remarkable natural production:—"You undoubtedly have heard of the enormous copper rock at Eagle Harbour location; pronounced by Dr. Petit the great-grandfather of all the rocks of this kind—estimating its weight at from 75 to 100 tons. A brief description by an eye-witness may be interesting to your readers. At Eagle Harbour, commencing at the shore of the lake, is an open cut 12 feet wide, 85 feet long, 7 to 8 feet deep,—in which is found this enormous mass of copper. The sheet, which is 90 per cent. pure copper, is in the centre,—running the entire length of the cut,—varying in thickness from 6 inches to 2 feet,—having branches of from one to two inches in thickness shooting from it east and west, and varying in length from one to two feet. The interstices are filled with sand and trap rock, charged with native copper—say 50 to 75 per cent.; also small masses of beautifully crystallized marcasite or spar, filled with what has the appearance of copper filings—being quite rich. This is what is called the copper rock—as unlike a rock as possible. It looks more like a large tree that had fallen and turned to metal—with this exception that its depth is not in proportion. Large detached masses of native copper, weighing from 50 to 300lb., are taken from alongside of this sheet; and the vein stone up to the wall rock is richly charged with copper in its native state."

SIXTEENTH MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

[*From our own Correspondents.*]

THE order of proceedings on the occasion of the Southampton Meeting was much the same as at former congresses of the body; but may be summarily described, according to our usual practice, by way of a guide to our more detailed Report. On Wednesday, the General Committee assembled, as we have already reported. On Thursday, as we have stated, the Sectional meetings commenced; and in the evening the General Meeting was held for the delivery of the President's opening Address, and the reception of H.R.H. Prince Albert. Friday morning was

occupied with Sectional meetings; and in the evening the Members mustered strong at the Victoria Rooms, to hear Prof. Owen's lecture on the 'Fossil Remains of Britain.' On Saturday, there was little business transacted in the Sections;—the day being employed by the Geological Section in a scientific excursion round the Isle of Wight; while the Botanical Section visited the gardens of the Dean of Winchester, at Bishopstoke. The Geological Section was accompanied in its sea-trip by numbers of the other Members and many of the visitors; while another party crossed the Island in carriages to look out for them by Black Gang Chine. In the evening, there was a *Conversazione* at the Victoria Rooms. On Monday, the Prince-Consort visited most of the Sections; and expressed his satisfaction by the donation of 100*l.* towards the objects of the Association. There was a meeting of the General Committee at the Town Hall in the afternoon; and Mr. Lyell's lecture, at the Victoria Rooms, in the evening, on 'The Geology of Portions of the United States.' On Tuesday morning, there were Sectional meetings; and in the evening a General Meeting to witness the experiments with Prof. Schönbein's explosive cotton,—and hear Mr. Grove 'On the Decomposition of Water by Heat.' On Wednesday, some of the Sections again met; in the afternoon the General Committee assembled to sanction the Grants which had passed the Committee of Recommendations; and in the evening, the concluding meeting of this congress was held,—at which these grants were reported.—On Thursday, in pursuance of an arrangement made with the proper authorities, the Foreign Associates, accompanied by many of the Members, proceeded to Gosport and Portsmouth to inspect the features of interest in the harbour and Dock and Victualling-yards.

GENERAL COMMITTEE.

MONDAY.

The President, on taking the chair, announced that Prince Albert had visited most of the Sections during the day; and would have gone to all had he not been called away to meet the Queen, who had come over to Southampton Water. He added that he had seen Her Majesty, and that she had expressed a deep interest in the success of the Association.

Mr. J. Taylor announced that Prince Albert had contributed 100*l.* to the funds of the Association, without any restrictions as to its application.

Invitations for next year were received from Oxford, Norwich, and Swansea. Invitations for an early visit, without specifying the year, were presented from Belfast and Edinburgh.

On the motion of the Marquis of Northampton, seconded by Sir John Herschel, it was resolved that the next Meeting of the Association should be held in Oxford.

The following officers for the next Meeting were then appointed:—

Sir R. H. Inglis, *President.*—Earl of Rosse, Bishop of Oxford, The Vice Chancellor, — Estcourt, Esq., M.P., Dr. Daubeny, Rev. B. Powell, *Vice-Presidents.*—Rev. E. Hill, *Local Treasurer.*—Rev. R. Walker, R. W. Ackland, Esq., *Local Secretaries.*

The day of meeting was fixed for Thursday, the 24th of June;—and the Committee then adjourned to Wednesday at three o'clock.

THURSDAY, SEPT. 10.

SECTION A.—MATHEMATICAL AND PHYSICAL SCIENCE.

President—Sir J. F. W. Herschel.
Vice-Presidents—Sir D. Brewster, Prof. Wheatstone, Col. Colby, Dr. Whewell.
Secretaries—Dr. Stevelly, Messrs. G. G. Stokes, J. Drew.
Committee—Prof. Oërsted, M. Svanberg, Prof. Wartmann, Messrs. Allen, W. R. Birt, Hon. and Rev. C. Harris, Messrs. W. S. Harris, R. Hunt, Dr. Lee, Mr. J. Phillips, Rev. Dr. Robinson, Mr. F. Ronalds, Capt. Sir J. C. Ross, R.N., Mr. J. Scott Russell, Colonel Sabine, Rev. Dr. Scoresby, Rev. Dr. Wilson, Rev. R. Walker, Mr. J. A. Dale, Dr. Green, Col. Everest, Mr. R. W. Fox, Prof. Eisenlohr.

Sir J. F. W. Herschel, President, on taking the chair, explained the objects of the Association.

The first paper read was a Report, 'On Gauss's Magnetic Constants,' from Prof. Erman.—The author, after pointing out, by several examples, the uselessness of accumulating, beyond certain bounds, mere observations, without subjecting them to scientific reduction, and the importance now attached on all hands to such reductions,—as exemplified in the case of the reduction of all the Greenwich Observations, lately executed by the Admiralty, at the solicitation of the British Association,—a work which M. Bessel welcomed in the last moments of his life as the beginning of a new period in astronomy;—and, after instancing the fact that the Association had been compelled to discontinue many valuable and systematized courses of meteorological observations, in consequence of the stores of unreduced observations outstripping their power to have them reduced, stated, that the determination of the Gaussian magnetic constants had appeared to them, at the meeting at Cambridge, last year, of such importance, that a sum of 50*l.* was intrusted to him, for the purpose of reducing certain observations made by him on terrestrial magnetism, during the year 1829, at several stations round the earth; and applying them to the purpose of determining those constants for that year. The present report was a statement of the results already obtained from this arrangement. The observations to be reduced had been made by M. Erman, from the year 1828 to 1830, at 650 nearly equidistant stations, along a line encircling the globe between the latitudes 62° N. and 60° S.:—at each station the dip, the horizontal direction, and the intensity had been observed. The labour of reducing these had not only far exceeded that which he (M. Erman) could afford to bestow on it, but even the leisure of an industrious and intelligent young mathematical friend, M. Petersen, was found to be quite inadequate, also; when the Association, recognizing the importance of the work, placed at his disposal 50*l.*, in order to enable M. Petersen to prosecute the task;—and the report now detailed the extent to which he had gone in his labours.—The President then said, that, as the rest of the Report was mathematical statement and arithmetical applications of formulæ, he could not hope to make it intelligible to the Section by reading. He would, therefore, content himself with briefly explaining that Gauss, in applying the general formula of Laplace, of the attraction of a spheroid to the magnetism of the earth, found that about twenty-four quantities,—which, though subjected to a slow or secular change of value, yet might at any one time be considered as constants, if combined with multiple arcs of the latitude and longitude and other quantities depending on the dip, horizontal direction, and intensity, and which could, therefore, be experimentally determined,—would give an equation for each station. It is, therefore, plain that twenty-four well-selected stations would, by giving twenty-four distinct equations, enable a mathematician to determine each of these twenty-four constants, which might be considered as the only unknown quantities in these equations. And for many reasons it was manifestly advisable to extend these stations as much beyond the mere twenty-four as possible. Of the 650 stations of M. Erman, the observations of 283 had been reduced. The Section might judge of the amount of labour involved in these reductions when he informed them that the tables which he now exhibited embraced 180,000 calculations, each of which required the table of logarithms to be five times consulted;—this was a degree of labour which the same sum of money would utterly fail of purchasing in this country.

'On the Bands formed by the Partial Interception of the Prismatic Spectrum,' by Prof. Powell.—The Professor gave a brief history of the announcement of what was called a new polarity of light, by Sir D. Brewster, at the Liverpool and Newcastle Meetings;—of the first paper, communicated by the Astronomer-Royal to the Royal Society, to show that the fact on which Sir David Brewster founded this announcement was a result of the ordinary theory of undulations, without requiring any aid of the hypothesis of a new polarity of light;—Sir D. Brewster's reply to this paper at Glasgow, that it required the supposition of the telescope not being adjusted to focus—whereas the bands were most distinct when that adjustment was most accurate. This called forth a second paper from the Astronomer-Royal, in which he modified his first assertion by saying, that the distance of the bands depended on a quantity $\frac{\lambda e}{h}$ in which h is the diameter of the pupil of the eye. At Cambridge, Sir D. Brewster denied this, asserting that the distance of the bands in no respect depended on the size of the pupil. To the correctness of this statement Prof. Powell bore testimony; but stated that the bands became much more distinct as the size of the aperture was diminished. In the discussion relative to these bands one or two points suggested themselves which appear to need further remark. The principal objection was, that, according to the theoretical formula, a *contraction* of the aperture of the eye or telescope should produce an *enlargement* of the intervals between the bands; which is not confirmed by experiment. The author finds that, with a contraction down to the 20th of an inch, though there is no sensible enlargement of the intervals, yet the *bands become greatly more vivid and distinct* while they extend only over a smaller portion of the spectrum at a time. With the same plate, the enlargement of the intervals appears to depend solely on the increase in the angular extent of the spectrum subtended at the eye, whether produced by a greater distance from the origin, a greater prismatic angle, higher dispersion, or greater power in the telescope. The formula involves the ratio of the semi-aperture to the distance of an assumed point on the retina from the geometrical image of the point of light; and this being dependent on no arbitrary supposition, but on a direct portion of the theory, it seems unreasonable to pronounce it "untenable" and "quite inadmissible," when the question at issue is, whether the theory as a whole will apply to the phenomena? Apart from all theory, when under certain conditions bands are formed equally, whether the plate be applied at one end of the spectrum or at the other, "polarity" seems an improper term by which to describe the effect.

'On the Constitution and Forces of the Molecules of Matter,' by Dr. Laming.—This was an elaborate theory of the molecular constitution of matter; applied in forty-two distinct propositions to the explanation of gravitation, temperature and specific heats of gases, cohesion, affinities, latent heat, volume, disturbances of electrical equilibrium, and other electrical phenomena, with electro-motion and electro-chemical decomposition. In this theory, matter is regarded as constituted of atoms; each of which consists of three sorts of spherical atoms, distinguished as *basic*, *calorific*, and *electrical*. The only force it recognizes is *attraction*. The basic atoms do not attract one another, neither do the calorific; but the electrical attract each other with a force reciprocally as the square of their distances. Each electrical atom attracts calorific atoms around it, and each basic atom attracts calorific in unlimited numbers; whilst it also attracts around it electrical atoms, in some large but definite number. This number is in each case unchangeable, but the basic atoms differ one from another in attracting around them a greater or less number of electrical atoms. The force between basic and electrical atoms is much greater than that between the electrical atoms mutually; hence, one of these is termed the major, the other the minor electrical force. The attraction of the basic for the calorific atoms is intermediate between these. The attraction of the electrical for the calorific atoms is the greatest of all the mutual forces. The immediate consequence of these forces is to cause each electrical atom to be surrounded by calorific atoms, and each basic atom to be then enveloped with these electrical atoms, in greater or less number according to its chemical nature, but in each case definite. One of these basic atoms so surrounded is the elementary molecule of matter, or the simple atom of the chemist. Each basic atom thus surrounded by its sphere of electrical atoms constitutes an *electrosphere;* but a change of the calorific atmospheres of the electrical atoms of this, may cause a change of their arrangements about the central basic atoms, so that some of the electrical atoms may be thrown out on the surface of the electrosphere and thus become *complementary;* and it is upon the mutual actions and relations of these complementary atoms that all electrical and other phenomena inolving change are supposed to depend. One remarkable consequence of this theory is, that gravitation depends on the electrical atoms alone; and that hence a positively electrified body must be heavier, and a negatively electrified body lighter, than the same body with its electricity in the ordinary undisturbed state. This the author proposed to prove experimentally to the Section by an experiment to which he was conducted by the theory, as soon as he could procure a cylinder electrical machine with an insulated rubber.—The President proposed that

discussion on the communication should be suspended until Mr. Laming had exhibited this experiment.

'On Magnetic Causation, and Intrinsic Forces,' by Mr. G. Towler.—The Secretary read an abstract of this very voluminous communication,—but it would be impossible to make his views intelligible in any reasonable space.

FRIDAY.

Prof. Challis reported provisionally his regret that a press of business had prevented him from, this year, presenting the Report on the advance of Astronomy which he had been requested to draw up; and expressed strong hopes of having it ready to present to the succeeding Meeting.—Dr. Whewell could testify that his friend Prof. Challis had been, this year, invaded by such a list of barbarous comets as to render the completion of the Report impossible.

'Report on Recent Researches in Hydrodynamics,' by G. B. Stokes.—This report was divided into the following heads:—1. General theories connected with the ordinary equations of fluid motion. 2. Theory of waves, including tides. 3. The discharge of gases through small orifices. 4. Theory of sound. 5. Simultaneous oscillations of fluids and solids. 6. Formation of the equations of motion, when the pressure is not supposed equal in all directions. The first head referred to investigations of a rather abstract nature. Under the second, the researches of Mr. Green, Prof. Kelland and Mr. Airy, on the subject of waves, were particularly alluded to, and the accurate agreement of theory with the experiments of Mr. Scott Russell pointed out. The important investigations of Mr. Airy on the theory of the tides, were also mentioned. Under the next head were mentioned some experiments of MM. Barré de Saint-Venant and Wantzel, by which an empirical formula was obtained for the velocity of discharge of air through a small orifice, when the discharge is produced by a considerable difference of pressure. The common formula does not apply to extreme cases. A memoir, by Mr. Green, on the reflexion and refraction of sound was then alluded to,—a memoir which is remarkable from its bearing on the physical theory of light. The investigations mentioned under the fifth head related principally to the motion of pendulums in resisting media. Mr. Green has solved the problem in the case of an oscillating ellipsoid. The last head contained a notice of the theories of MM. Navier, Poisson, and others on the irregularity of pressure in different directions about the same point. This theory may be considered to be that of the internal friction of fluids.

Dr. Whewell thought he had ample reason to congratulate himself and the Section on the success of the advice which he had given when, in the year 1830, his friends Mr. Harcourt and the Dean of Ely, had consulted regarding the proper objects which such an association as the then contemplated British Association should propose to itself. He had then advised that one very prominent object should be the preparation of Reports on the actual state of human knowledge in the several departments of Science,—and one of the fruits of that advice had been the very able report which had just been presented by his friend Mr. Stokes. When he contrasted the present scientific position of British philosophers with what it had been only sixteen years ago, when Britain was vastly behind the continental philosophers, not only in scientific attainments, but even in the knowledge of what had been achieved by others, he could not but congratulate all concerned that that stigma had been so completely wiped away. Dr. Whewell then proceeded to comment on several parts of the Report, and pointed out the importance of keeping distinctly before the mind the essential difference between two kinds of waves, in one of which the motions of the particles of the fluid were the same from the top to the bottom, in the other, the motions of the particles, while all circular, or rather elliptical, diminished rapidly until at the bottom it became nothing. Of this latter kind a familiar illustration could be had by watching the waves which the wind produced as it swept over fields of standing corn or long grass. He then adverted to the formation of the double wave, —an example of which was afforded by the tides at Southampton; and which had been investigated by Mr. Scott Russell in the Forth, and by others at Ipswich. He then briefly reviewed the theoretical researches of Weber, Kelland, and Airy, on the subject of waves; and concluded by saying, that as waves of sound were reflected echoes, so he conceived they must suffer refraction, though the observing of this was attended with experimental difficulties; but that these waves were diffracted, he conceived no one could doubt who would attend to the varying sound of a cascade as you approached it round a bending course, it being at first hidden from sight by interposed rocks, banks, or other obstacles.—The President agreed with Dr. Whewell, and not only did he conceive that sound could be reflected, refracted and diffracted, but pointed out several cases, as in some of the phenomena of the tuning fork, where something closely analogous, at all events, to polarization must take place,

'Notice of a New Property of Light exhibited in the Action of Chrysammate of Potash upon Common and Polarized Light,' by Sir D. Brewster.—The chrysammate of potash, which crystallizes in very small, flat rhombic plates, has the metallic lustre of gold, whence it derives its name of golden fluid. When the sun's light is transmitted through the rhombic plates it has a reddish yellow colour, and is wholly polarized in one plane. When the crystals are pressed with the blade of a knife on a piece of glass, they can be spread out like an amalgam. The light transmitted through the thinnest films thus produced, consists of two oppositely polarized pencils, —the one of a bright carmine red and the other of a pale yellow colour. With thicker films, the two pencils approach to two equally bright carmine red pencils. It is to the reflected light, however, and its new properties, that I wish to direct the attention of the Section. Common light, reflected at a perpendicular incidence from the surfaces of the crystals, or of the films, has the colour of virgin gold. It grows less and less yellow as the incidence increases, till it becomes of a pale bluish white colour at very great incidences. The compound pencil, thus reflected and coloured, consists of two oppositely polarized pencils,—one polarized in the plane of reflexion, and of a pale bluish white colour at all incidences, and the other polarized perpendicular to the plane of reflexion, and of a golden yellow colour at small incidences, passing successively into a deeper yellow, greenish yellow, green, greenish blue, blue, and light pink, as the angle of incidence increases. This very remarkable property, which I have discovered also in some other crystals, is not caused by any film of oxide formed upon the natural surface of the crystal, nor is it the result of any change produced upon the surface by external causes. It is exhibited, under the usual modifications, if the surface of the chrysammate is in optical contact with fluids and with glass:—and when the crystal is in the act of being dissolved, or when a fresh surface is exposed by mechanical means, the superficial action of the crystal upon light is in both cases the same. When the chrysammate is re-crystallized from an aqueous solution, it appears in tufts of prisms of a bright red colour, the golden reflexion being overpowered by the transmitted light; but when these tufts are spread into a film by pressure, the golden yellow colour reappears. When the crystals of chrysammate are heated with a spirit lamp, or above a gas burner, they *explode* with a flame and smoke like gunpowder; and, by continuing the heat, the residue melts and a cross of colourless amorphous crystals is left. I have found the same explosive property in the aloetinate of potash.

Dr. Whewell conceived this was rather a curious action of the chrysammate and aloetinate of potash on light than any new property of light. —The President, Sir J. Herschel, was inclined to agree in that opinion, since nothing was more clearly established than that the colours ultimately exploded by light reflected from the surfaces of bodies depended on the number of superficial particles which the light penetrated in the first instance, and their power of absorbing or extinguishing a portion of that light during that penetration. This had been experimentally decided by thin plates of gold, through all the various shades of that metal, down to the red of copper. Whether the title of the paper, however, exactly agreed with the observed facts or not, all must admit that these facts were most important and deserving of serious attention. He was not acquainted with the substance—chrysammate of potash, but its properties, both optical and mechanical, seemed to be interesting. The plasticity which it seemed to exhibit in particular occurred to him as curious; and this reminded him of a somewhat analogous property lately discovered in the substance plumbago, or the black lead which pencils are made of. It is well known that that substance can only be obtained in any purity at Borrowdale, in Cumberland, and is lately becoming very scarce. Now, although the powder of plumbago is one of the best materials for preventing friction or the partial adhesion of other things, yet it has been lately found that the particles of the powder themselves are capable of being made to adhere into a mass—indeed, more compact and uniform in its texture than the best mineral plumbago, by simply inclosing it in a case, extracting the air from among the particles, and subjecting the mass to violent compression.

Prof. Powell said that the young gentleman who sat near him was the discoverer of the chrysammic acid, and would, perhaps, be kind enough to describe its mode of production.—Mr. Schunck (of Rochdale) said that he had discovered the acid, which was part of the composition of the salt of which Sir D. Brewster's paper treated. It was formed by the action of boiling nitric acid upon aloes, and was one of the last products of that action. The aloetic acid of the other salt spoken of by Sir David was the first product of that action. The chrysammate of potash was a beautiful and curious salt; and although so plastic as to be readily moulded into thin plates, was yet so sparingly soluble as to require above 1,500 times its weight of water to dissolve it.

'On Elliptic Polarization,' by Mr. Dale.—The paper which I have to read to the Section relates to some new observed facts in the subject of elliptic polarization, which appear to point out the physical element on which depends the different action of metals on light, as compared with transparent substances in general. They have already been communicated to the Ashmolean Society at Oxford, but I have been induced to bring them forward at present, with a view of more readily gaining for them the notice of those interested in optics. This peculiar action, it will be remembered, is of this kind: firstly, that the metals (and metallic sulphurets, &c.) have no angle of complete polarization for common light; and secondly, that a plane polarized ray becomes elliptically polarized after reflexion from their surfaces, whereas it remains plane polarized after reflexion from glass and such like bodies. Endeavours have naturally been made to account for these phenomena on the principles of the undulatory theory; and always, apparently, on the supposition, that the laws of reflexion from transparent (uncrystallized) bodies were already rigorously given by Fresnel's formulæ, but that a new and distinct theory was required for metallic reflexion. Thus assuming that the two classes of phenomena were abruptly separated, without any intermediate links of connexion. It has, indeed, long been known that several transparent or translucent substances have no angle of complete polarization. Thus, Biot (Traité de Physique, iv. 288) has excepted sulphur and the diamond; and Sir John Herschel (Optics, Art. 845; see also 831) excludes from the general rule, besides the metals, those substances which have the adamantine lustre; which term is applied, in Mohs' system of crystallography, to several of the minerals to be presently spoken of, as resembling the metals in another respect. I do not know that any writer, except Mr. Green (in Camb. Phil. Trans. vol. vi.), has stated this exemption to be general for all substances having a high refractive index; but it is important to recall this experimental fact to our attention, on account of its coincidence and harmony with the new result which I have now to state. It consists in this: that these same highly refractive substances resemble the metals also in a second respect—that they confer elliptic polarization on a plane polarized ray reflected from them. The following list of substances, in which this property was observed, will be found to contain most of those at the top of Sir D. Brewster's list of refractive indices:—

Indigo—which is remarkable for possessing the metallic lustre without containing any metal.
Artificial Realgar.
Diamond—of which three specimens were tried.
Sulphuret of Zinc in transparent crystals.
Glass of Antimony—translucent.
Sulphur—melted on a polished slip of zinc foil.

Tungstate of Lime—transparent.
Carbonate of Lead in crystals, clear and limpid as glass.
Hyacinth, or Zincon—translucent.
Arsenious Acid.
{ Garnet.
{ Idocrase.
Helvine.
Labrador Hornblend.

Of which the last five possess the property in a very slight degree only. The test used in every case was the dislocation of the rings of a plate of cole spar; of which a very good specimen was used, capable of exhibiting eight or nine red rings: and all the experiments were made by candle-light, which is indispensable. It will secure greater confidence in these results to say, that all the specimens which I submitted to Prof. Powell's examination, in a different instrument, were found by him to produce the above effect; and from his published observations several more cases may be quoted in confirmation of the general result: such are—chromate of lead, litharge, plumbago, and Indian ink. The natural conclusion from these facts appears to be, that in a perfect mathematical theory of reflexion, both cases should be embraced in one set of formulæ, of which some terms or coefficients should be insensibly small, except when the refractive index was very large; that, *strictly* speaking, no substances *completely* polarize common light at any angle, but that the residue of unaltered light is too feeble to affect the eye, when the refractive index is below a certain limit;—and that plane polarized light always becomes elliptically polarized, but that the virtual difference of paths of the two compact vibrations parallel and perpendicular to plane reflexions is insensibly small, except the refractive index surpass a certain value greater than the refractive indices of felspar and sapphire—which I found to produce no dislocation of the rings. It is remarkable, that such formulæ have, some time since, been deduced from a very profound mathematical investigation, by Mr. Green, in the Cambridge Philosophical Transactions, vol. vii.;—whose results, however, do not seem to have met with much attention. Now, however, that they have met with the above undesigned general confirmation, it seems very desirable that they should be compared with the numerical results of experiments of Sir D. Brewster and Prof. Powell. Mr. Green adopts, as part of the basis of his calculation, the original view of Fresnel,—that the vibrations of a polarized ray are perpendicular to the plane of polarization; but as this point is a matter of dispute amongst mathematicians, I have thought of an experimental method by which this point might, as I think, be decided, independently of all theory. It consists in the observation of the shifting of the fringes produced by two pencils of light polarized in the same plane on interposing in their paths a piece of compressed glass. This last apparatus is to be constructed in the following manner:—A strip of clear plate, 4 or 5 inches long by half an inch broad, is to be provided; and its narrowest faces (or narrowest long sides of the parallelopiped) are to be carefully polished, and rendered perfectly plane and parallel to each other,—at least, in the middle part of their length, through which the light is to pass. And the glass must be so well annealed and so free from striæ as to allow of the formation of fringes by interfering pencils which have traversed it. It is to be provided with a wooden frame and screw, capable of compressing it in the middle. (A similar apparatus has already been employed by Brewster, Ling and Pouillet, to show that glass under pressure possesses double refraction.) We may now proceed to the experiment itself. Let us suppose, then, that the arrangements have been made in a darkened room for producing the interference of two pencils of light, which are to be polarized in the same plane, by passing, for example, through the same tourmaline plate. This arrangement might, in fact, be that of Fresnel, in which a slender beam is reflected from two glass plates very slightly inclined, provided that the light were incident at the polarizing angle of glass. And, for the sake of clearness, let us suppose the two foci, or virtual foci, to be vertically one above the other, the plane of polarization to be vertical, and the glass to be interposed with its length horizontal. Then, in its natural state, it will produce no displacement of the fringes, if made carefully after the above description. But let us consider what will be its effect, if interposed in its bent state. The elasticities on its convex and concave sides are different in this respect, that the particles are dilated or compressed *parallel to the length of the glass:* whereas little or no alteration of elasticity is produced in a plane perpendicular to the length of the glass. Hence, if the vibrations of the two polarized pencils are really executed perpendicularly to the plane of polarization, or parallel to the length of the glass, (according to the arrangement above agreed upon,) they will be propagated with different velocities, and the fringes will be displaced parallel to the length of the glass, in a direction which might be inferred from some statements of Sir D. Brewster, but which is quite unimportant to the present purpose. If, however, on the other hand, the vibrations be executed in the plane of polarization, or perpendicular to the length of the glass, the two rays will traverse the glass with almost, or quite, the same velocities, and the fringes will either not be displaced at all, or to a far less amount than in the preceding case.

'On certain Cases of Elliptic Polarization of Light by Reflexion,' by Prof. Powell.—From the principle investigated by Fresnel, that polarized light changes its plane, in reflexion, by a certain law dependent on the incidence (from transparent media) and the extension of a similar law to reflexion from a second surface, by Sir D. Brewster (Phil. Trans. 1830, p. 148), other formulæ were obtained by the last-named philosopher to express the varied phenomena observed by himself (Phil. Trans. 1841) in the reflexion of polarized light from thin films, in extension of those previously investigated by Mr. Airy and M. Arago. The whole subject was reduced to the principles of the Undulatory Theory by Dr. Lloyd (see Brit. Ass. Report, 1841, Sect. proceedings, p. 26), who pointed out the further theoretical result that, owing to the difference of phase or retardation thus produced in the two portions into which the reflected light is divided, polarized light reflected by a thin plate will, in general, become elliptically polarized.* It is certain, however, that, in a great number of cases of thin plates examined by the author of this communication, no ellipticity can be detected. Glass superficially decomposed and giving brilliant tints produces no ellipticity, except in those instances where it has a decided *metallic* lustre. Vapour condensed on soaped glass (in the manner described by Sir D. Brewster), oil of turpentine, cassia, &c., between glass plates, (the upper being slightly prismatic, to separate the reflexions,) are equally without effect. The theory, therefore, clearly needs some further modification to express the conditions under which the effect may be sensible. There are, doubtless, many cases of thin plates in which elliptic polarization is produced, as in the films formed on metallic plates by Nobili's process, and by heat, as investigated by the author of this communication: or, again, as in mica which has become laminated, &c. But in these cases the *modus operandi* is well understood;—in the former, from the enormously high refractive power, and in the latter from the crystalline structure. In the case of China ink observed by the author, the ellipticity appears equally, whether it be in the form of a film or in a solid mass—though it is only seen in the purest specimens. In the numerous other cases examined by Mr. Dale, it does not appear that anything like films can be supposed; the only condition seems to be the high refractive power. It may still be a question, then, whether the theory proposed independently by M. Cauchy and by Mr. Tovey be not more easily applicable,—since it requires nothing but the very simple and admissible hypothesis, that the *molecules of æther*, for a minute depth within the surface, are *unsymmetrically distributed*. (See the author's treatise on the Undulatory Theory applied to Dispersion, &c.) In various substances containing but a very small proportion of metal ellipticity has been detected, in addition to those enumerated by the author on a former occasion. Among these are Prussian blue, and the meteorite from the Cape of Good Hope, described in the Philosophical Transactions, 1839 and 1840,—which contains only about 33 per cent. of prot-oxide of iron, very small portions of oxides of nickel and chrome, and a trace of metallic iron (see Phil. Trans. 1839, i. 86).

Dr. Whewell made some observations on the foregoing communications; during which he stated at length his views of the necessary conditions of the mathematical theories of physical optics.—The President stated his reasons for thinking that the method proposed by Mr. Dale for determining the directions of the vibrations by experiment, could not be effective; and pointed out the curious difference that existed between the action of quartz upon light (which polarized it in the same way whether the light were transmitted backward or forward along the axis of the crystal), and the action of the media in Faraday's experiments, which, if the ray were transmitted in one direction, polarized it right-handedly—but left-handedly when transmitted in the opposite direction. —Mr. Stokes conceived that a difference of physical causes, answering to this difference of effect, was imaginable. The quartz crystal might act in consequence of a structure something analogous to a screw; which, whether you look at it in the one direction or the other along the axis, would be still either a right-handed or a left-handed screw; while the spiral currents of electricity, in the other case, if looked at along the axis in one direction would have an opposite circulating course from what they would have if the ray were viewed as going in the opposite.

'On some Results of the Magnetic Observations made at General Sir T. M. Brisbane's Observatory, Makerstoun,' by J. A. Broun.—1st. *Magnetic Declination.*—The annual diminution of westerly declination at Makerstoun is 5′ 8″. When proportional parts of this have been added to the monthly means, from January 1844, till August 1846, their whole range is only 2′ 1″; that is to say, the mean position of the magnetic needle for any month, freed from secular change, has not been about 2′ 1″ farther west than the mean position for any other month. Mr. Broun conceives that he has found the *annual period* of westerly declination to consist of a minimum at the vernal, and of a maximum at the autumnal, equinox: the mean range being under 1′ 2″. From the observations for 1843, Mr. Broun has concluded that there is a maximum of westerly declination when the sun and moon are in opposition, and a minimum when they are in conjunction; that there is a maximum of westerly declination when the moon has its greatest north, and also when it has its greatest south declination, minima occurring when it crosses the equator. In the *diurnal period*, the double maximum and minimum have been found to exist in each month of the year. In the 'Transactions of the Royal Society of Edinburgh,' Mr. Broun has given certain results relating to the horizontal and vertical components of the earth's magnetic force; but these results were obtained in scale divisions corrected for temperature by his method. In order to deduce the variations of magnetic dip and of the total magnetic force, from the variations of these components, it was necessary to determine the values of the scale divisions in known units. Mr. Broun had previously shown* the inapplicability of the method given by the Committee of Physics of the Royal Society of London for the balance magnetometer. He now described a method by which the value of the micrometer divisions may be satisfactorily determined. This method will be found in the Introduction to the Makerstoun Observations for 1843. He has applied the same method to the bifilar magnetometer, and has found that the value of the scale divisions, obtained in the way recommended by the Committee of Physics, is also inaccurate for this instrument. With the aid of the values obtained by the new method, the following results have been deduced.—2nd. *Magnetic Dip.*—The dip is a minimum when the sun and moon are in conjunction, and a maximum when they are in opposition. In the mean diurnal period for the year,

The principal maximum occurs at	10h.	10m.	a.m.
,, minimum	,,	5	40	p.m.
A secondary maximum	,,	2	0	a.m.
,, minimum	,,	5	40	a.m.

Makerstoun mean time being always used. These periods vary to some extent throughout the year, the principal minimum occurring at 6 a.m. in winter; the two minima being nearly equal to the equinoxes, and the diurnal curve being single in summer. Mr. Broun has found that there is a maximum of dip about four hours and a half before the moon's passage of the superior meridian; a minimum about half an hour after that passage; a secondary minimum about

* This deduction, though stated in the Report given by the *Athenæum*, is omitted in that inserted in the volume of the Association, 1841.

* Trans. Roy. Soc. Edin. vol. xvi.

three hours after it; and a secondary maximum about eight hours after it.—3rd. *Total Force of the Earth's Magnetism.*—A minimum occurs when the sun and moon are in opposition, equal maxima near the quadratures, and a secondary minimum at the time of conjunction. In the mean diurnal period for the year,

The principal maximum occurs at	5h.	40m.	p.m.
,, minimum ,,	2	10	a.m.
A secondary maximum ,,	7	10	a.m.
,, minimum ,,	10	10	a.m.

The periods of maxima and minima shift about two hours in the course of the year, and in summer the principal minimum occurs at 10h. 30m. a.m. The variations of force with reference to the moon's hour angle were found by Mr. Broun as follows:—The principal maximum occurs about two hours after the moon's passage of the inferior meridian; a secondary minimum about four hours before the passage of the superior meridian; a secondary maximum about one hour after the superior passage; and the principal minimum about six hours and a half after that passage. Curves were exhibited illustrating these results, and also the diurnal motion of a magnetic needle freely suspended in the direction of the magnetic force. From the latter some curious results have been deduced, which will be found elsewhere. It will be enough to mention, at present, that in the mean for the year, the motion from 6 a.m. till 6 p.m. is very trifling; between midnight and 6 a.m. the needle is almost stationary, nearly the whole motion occurring between 6 a.m., noon, and 6 p.m. The end of the needle describes an ellipse whose major axis is at right angles to the magnetic meridian; but the direction of this axis varies throughout the year.

Mr. Hopkins, 'On the Relations of the Semi-Diurnal Movements of the Barometer to Land and Sea-Breezes.'—Mr. Hopkins exhibited diagrams, drawn up from Col. Sabine's paper 'On the Meteorology of Bombay,' of the diurnal temperature curve, total pressure curve, and gaseous pressure curve; with a diagram representing the swelling and sinking of the land and sea breezes; and endeavoured to show that these were inconsistent with the explanation given by Col. Sabine, but harmonized with alternations of pressure caused by the alternate extrication of heat and absorption of it during the alternate evaporations and depositions of water, in the state of clouds and dew. He regretted that Col. Sabine had not given tables of the wet and dry bulb thermometers at the several hours of the day.*

Capt. Shortrede asked Mr. Hopkins several questions; and, from his own observations in India, extending over many years, must dissent from Mr. Hopkins, as to the manner in which he supposed clouds to form and disperse. The effects he ascribed were disproved by the fact, that several miles inland, where there were no land and sea breezes, the clouds were formed and dispersed in precisely the same manner.

The President and leading members of the Section having been obliged to go to the Committee of Recommendations, the Section was adjourned by Prof. Oersted, who had kindly taken the chair.

Section B.—CHEMISTRY AND MINERALOGY.

President—Mr. Faraday.
Vice-Presidents—Prof. Grove, Dr. Andrews, Prof. Johnston, Dr. Daubeny.
Secretaries—Dr. Miller, Messrs. R. Hunt, W. Randall.
Committee—Prof. Rosé, M. Dumas, Prof. Oersted, Dr. Playfair, Prof. Solly, Mr. J. Prideaux, Prof. Schönbein, Prof. Forchhammer, Messrs. R. Mallet, H. Osborn, W. West, R. Warington, Dr. Lee, Messrs. J. Wilson, W. Lucas, T. J. Pearsall, T. Ward, Capt. Bolton, Dr. Percy, Messrs. W. Sharpe, T. P. Gaskiet, Prof. Connel, Mr. J. P. Joule, Dr. Schunk, Messrs. T. Henry, W. Francis, Rev. J. Barlow, Dr. Letheby, Messrs. P. Johnson, — Maskelyn.

'On the Presence of Atmospheric Air and Uncombined Chlorine and Carbonic Acid found in the Water of some of the wells in the suburbs of Southampton, and their Action on Lead,' by H. Osborn.—The principal object of this paper was to caution persons residing in the neighbourhood of Southampton, against the use of leaden pipes for conveying water, and to induce them to avoid the use of lead in any form for that purposes without having the water previously examined in order to ascertain whether it possessed the property of acting upon the metal and holding it in solution. The author brought forward several instances of the serious consequences which had resulted from the use of water impregnated with lead, and pointed out the different solvent principles found in the water; one of which was uncombined chlorine discovered in a spring in the New Forest. The water possessed the property of bleaching brazil paper, and reddening litmus paper by evaporation. The amount of uncombined chlorine was estimated as chloride of silver,—by deducting the amount of the latter contained in 20 ounces of water from that of the chlorine contained in the solid contents, the former weighing 1·2 more than the latter—thus indicating 0·296 of uncombined chlorine, which is capable of uniting with 0·864 of lead, forming 1·16 of chloride of lead in the imperial pint. The lead held in solution by carbonic acid, and the oxygen of atmospheric air, was converted into chromate of lead, and estimated as chloride of lead, which indicated 0·25 or 0·2 of the oxide in twenty ounces of water. The solid contents in an imperial pint were found to vary from one grain to three grains, and to be composed of the chlorides of sodium, calcium, and magnesium, sulphate of lime, silica and vegetable matter. Notwithstanding the preservative property,—which the salts contained in spring water are said to possess, by forming an insoluble crust in the interior of the pipes, it was found that the leaden pipes had been in use for some years, and the action of the water on the lead still continued with as much energy as when they were first laid down, thus showing the presence of the above solvents, and that they met with no resistance from the presence of the saline matter.

Dr. Daubeny made some remarks pointing out the importance of the inquiry of Mr. Osborn, and the necessity of paying attention to the condition of the water supplied to towns through leaden pipes, or received in leaden cisterns.—Mr. Pearsall stated that he found that the presence of lead may be constantly removed from the water by the action of carbon, and that lead may be always separated by well agitating the water in contact with the air, and mixing up the sedimentary deposits.—The subject excited considerable attention, and many gentlemen joined in the conversation,—all of them adducing additional evidence of the importance of investigating the condition of water supplied to large towns.

'On the use of stating, with the results of Analysis, the nature of the Methods employed,' by W. West.—The author of this communication pointed out the necessity which existed for knowing, not merely the results to which chemists might arrive, but the processes by which these results were obtained. It was shown that many of the discrepancies found to exist in analytical results would thus be satisfactorily explained, and all doubt as to the correctness of an analysis removed.

'Report on the Actinograph,' by R. Hunt.—A description of this instrument, which is employed for the purpose of registering the amount of chemical influence existing, at all periods of the day or year, in the solar rays, was given. Many very important results had been obtained, which it was thought would go to show that many of the abnormal conditions of flowers—as for instance roses, which had exhibited the formation of leaf-buds in the centre of the flower—were due to the action, or inaction, of those rays which have received the name of the actinic. It was found difficult to use this instrument in London—it was therefore proposed to transfer it to the Observatory of the Association at Kew.

'Notices of the progress of Experiments on the Influence of Light on the Growth of Plants,' by R. Hunt.—The experiments described in former communications to the Association had all been confirmed by the results obtained during the past year. It had been found that seeds would not germinate if all the chemical rays were prevented from acting on them—and that the influence of the actinic or chemical rays was such that seeds germinated at a depth below the soil, under the influence of concentrated actinic force, acting on the surface, at which they would not have germinated under the natural conditions. The leaves being developed, the action of the luminous rays then became necessary to effect the decomposition of carbonic acid and the deposition of woody fibre within the plant. Under the joint influence of light and actinism the plant arrived at maturity, and then the calorific, or heat-producing, rays were brought more fully into action to produce the ripening of fruit and the developement of seed.

The paper gave rise to a long discussion, in which Dr. Daubeny, Prof. Grove, Mr. Prideaux, of Plymouth, and several other gentlemen joined. It was shown that the inquiry was of the utmost importance—and that many of the results obtained were of considerable practical value. The conditions of the solar rays at different seasons of the year, and also in different parts of the globe, were discussed—as well as the provisions regulating the distribution of plants under these influences shown. Some remarks of a more strictly philosophical nature, respecting the peculiar action of the rays as to their directive tendency, then followed.

FRIDAY.

Prof. Daubeny communicated a paper 'On the Rationale of certain Practices employed in Agriculture,' specifying amongst the rest the use of quicklime and of gypsum as fertilizers to the land. The former of these substances he supposes to act in part, by rendering those inorganic substances which are present in the soil more soluble, or,—in accordance with the views laid down by the author in a memoir which he has published in the Philosophical Transactions of last year,—by converting the *dormant* constituents of the soil into active ones, or into a state in which they become immediately available. He appealed to the authority of Prof. Fuchs, confirmed by that of Mr. Prideaux, of Plymouth, as showing that the alkali may be extracted from granite readily by water, after the rock in a pounded form has been heated, together with quicklime; and he stated that a soil exhausted by long-continued cropping was found by himself to yield to water twice as much alkali, after having been mixed with quicklime, as it had done before. Hence the frequent application of lime tends to produce exhaustion in the land;—not only because it supplies in itself no fresh alkali, but likewise because, by rendering that which the soil contains more soluble, it causes it to be washed away more readily by atmospheric water. Ploughing, and other mechanical methods of pulverizing the soil, appear to act in the same way; and so, also, may we suppose to do the sprinkling of the soil with sulphuric acid, as is practised in some parts of the Continent. The author then alluded to the various modes of explaining the advantage attributed to gypsum, which certain leading agricultural chemists had proposed: one ascribing its virtues to the direct influence of the salt; another to the indirect good resulting from it, owing to its property of fixing ammonia; a third, regarding its acid constituent as of the principal utility, and a fourth, its base. Dr. Daubeny gave reasons for rejecting the third and fourth of these hypotheses; but considered that the use of gypsum may be in part attributable to the first, and in part to the second, of the causes pointed out. He supposes that this substance is generally useful to all plants, from its property of fixing ammonia; and also especially serviceable to certain species, by supplying them with a salt which they require for their developement. He was principally anxious, however, to bring forward this subject, in the hope of inducing chemists to institute such experiments for the purpose of setting the question at rest.

A long discussion followed;—several agricultural gentlemen remarking on the effects of carbonate of lime on wheat crops, and on the resulting weakness of the straw, owing to a deficiency of the silicate of potash necessary for the formation of the supporting epidermis of the grass. Some specimens of the disease in turnips, commonly called fingers-and-toes, were exhibited; and it was stated that the superphosphate of lime was a remedy for that disease.—The Bishop of Norwich, however, remarked that the cause assigned for this disease was not that to which he believed it must be attributed. The flow of the sap was checked by the action of an insect, and then an abnormal condition developed. This year, in many parts of the country, this and similar diseases were very prevalent; and the rev. prelate was disposed to regard the existence so abundantly of this insect as in some way connected with the electrical condition of the atmosphere during the exceedingly hot weather which has prevailed,—producing with extreme rapidity the decomposition of animal and vegetable matter.—Dr. Faraday made a few remarks on our general ignorance of the chemistry of vege-

* These tables have been published, and also lithographed and distributed extensively by the East India Company; and Col. Sabine would, therefore, not have been justified in swelling the Report with these tables, when the curves deduced from them fully answered all the purposes they could have served.

table life, and on the importance of such meetings as the present, where the chemist and the agriculturist might meet and compare results. Since the days of Davy the science of agriculture has considerably advanced; but all that he heard convinced him of the fact, that we were only standing on the very threshold of an inquiry which would eventually, now that attention was so generally turned to the subject, advance our knowledge in an extraordinary degree.

'On the Decomposition of Water into its constituent Gases by Heat,' by W. R. Grove.—Prof. Grove, in the first place, called attention to the fact, proved by Cavendish and the French philosophers, that oxygen and hydrogen being exposed to a high temperature, or the electric spark—immediately combined to form water. He then announced his discovery that all the processes by which water may be formed are capable of decomposing water. He believed that the explosion of the mixed gases by the electric spark was due only to the heat of the spark, and not at all to electrolysis. Priestley's method for decomposing gases by passing them through heated tubes was described, and the advantages of using a form of Volta's eudiometer, in which incandescent platina was employed, to effect decomposition, pointed out. By an apparatus of this kind ammonia, camphor, the prot- and per- oxides of nitrogen were readily decomposed. It was stated that hydrogen gas exposed to the ignited wire always shows the presence of oxygen; and that it is impossible to pass hydrogen gas through water without its taking up so much oxygen, as to acquire the power of giving luminosity to phosphorus in the dark. It was found that if hydrogen and carbonic acid were exposed to the action of the ignited wire, there was a contraction of one volume, leaving a residue of carbonic oxide. If, instead of carbonic acid, carbonic oxide was employed, the mixed gases expanded in volume; and the carbonic oxide, taking oxygen from the water, was converted into carbonic acid. Here we have two dissimilar results produced by the same cause—by means of hydrogen we take oxygen from carbonic acid, and by means of hydrogen we take oxygen from water. If steam is formed in the eudiometric tube and acted on by the ignited wire on cooling, a small bubble of gas is formed, which is found to be oxygen and hydrogen in the exact proportions in which they form water. This is the result of the first action of the heated wire:—in a few seconds a small bubble of gas is formed, but if the action be continued for a week, it does not increase in quantity. It is, however, easy to remove the bubble as it is formed, and bring a fresh quantity of steam under the influence of the heated wire, and thus collect a quantity of gas which should be quite sufficient for any eudiometric examination. Numerous forms of apparatus were described by which this experiment can be performed. It might be objected that, as the wire was ignited by a Voltaic battery, the decomposition was not due to the heat of the wire, but to an electrolytic action. This objection would not, however, be maintained by those who were acquainted with electrical phenomena. With the view, however, of removing all doubt, the use of the battery was entirely done away with, and all the results were obtained by the agency of heat alone in the following manner. Into a silver tube a capillary tube of platina is soldered, and this is again connected with a bent tube, which admits of the removal of any gas formed. The tubes being filled with distilled water, their ends being immersed in vessels of oil or water,—the flame of a spirit lamp, urged by the blow-pipe, is brought to bear upon the capillary tube of platina, by which it is almost immediately brought to a white heat. The water is, of course, instantly converted into steam; and this steam is decomposed by the agency of the heat alone. By boiling, we thus convert steam into mixed oxygen and hydrogen gases; and this operation may be continued for any length of time by removing the bubble of gas formed, and bringing a fresh supply of steam under the influence of the heated platina. If fused globules of platina are dropped into water, there is immediately formed a bubble of oxy-hydrogen gas, which may be collected in an inverted tube. Prof. Grove went on to show the probable connexion between this phenomenon of decomposition and the spheroidal state of fluids when they are projected on capsules of heated platina, which had been referred to a repulsive action of a coating of steam enveloping the spheroid of fluid; but in all probability the revolving drop was undergoing decomposition by the agency of the heat to which it was exposed.

Dr. L. Playfair remarked that the facts which Mr. Grove had announced might possibly be regarded as due to a catalytic action of the platina, such as had been observed by Dr. Faraday, and such as was evidenced in the action of oxide of copper on the hypochlorites. Many bodies at high temperatures exhibited a great affinity for oxygen, which they did not possess at lower temperatures:—as, for instance, silver, gold, and even platina itself, which metals absorbed oxygen when intensely heated, and gave it out again on cooling. If the experiments had been tried in tubes of quartz or silica, they would not have been open to the objection which the use of so peculiar a metal as platina appeared to involve.—Dr. Leeson made some remarks, which went to show that in all probability the bursting of steam boilers might be explained by the discovery of Prof. Grove.—Mr. Hunt explained some experiments of Woolfe on the boilers of some Cornish steam-engines, which appeared to prove the conversion of steam into gas under the influence of the heat to which the water and steam were exposed in the experiments.—Prof. Faraday thought Mr. Grove's discovery would not explain the bursting of steam boilers, which might be easily done by Prof. Boutigny's experiments on the spheroidal condition of fluids. He did not agree with Prof. Grove that the repulsion of the steam was insufficient to explain the spheroidal state. He would rather desire, in the present stage of the inquiry, to discuss the philosophy of the question than the applications of Mr. Grove's discovery. Was it a decomposition of water by the agency of heat, or was it the action of certain substances when heated? It appeared to him that the investigation was a great step onwards and towards a knowledge of the corpuscular action of bodies, and he did not doubt that some remarkable developements as to the influence of caloric in overcoming the force of aggregation would ensue.

'On the Fairy-rings of Pastures,' by Prof. J. T. Wray.—A description of these patches, with which most persons are familiar, was given; and it was stated that the grass of which such rings are formed, is always the first to vegetate in the spring, and keeps the lead of the ordinary grass of the pastures till the period of cutting. If the grass of these fairy-rings be examined in the spring and early summer, it will be found to conceal a number of agarics, or "tond stools," of various sizes. They are found situated either entirely on the outside of the ring, or on the outer border of the grass which composes it. Decandolle's theory, that these rings increased by the excretions of these fungi being favourable for the growth of grass, but injurious to their own subsequent developement on the same spot;—was remarked on, and shown to be insufficient to explain the phenomena. A chemical examination of some fungi (the true St. George's Agaric of Clusius—*Agaric graveolens*) which grew in the fairy-rings on the pasture around the College at Cirencester, was made. They contained 87·46 per cent. of water, and 12·54 per cent. of dry matter. The ashes of these were found to contain—

Silica	1·09
Lime	1·35
Magnesia	2·20
Perox. Iron	trace.
Sulphuric Acid	1·93
Carbonic Acid	3·80
Phosphoric Acid	20·49
Potash	55·10
Chloride Sodium	0·41

The abundance of phosphoric acid and potash, existing, no doubt, as the tribasic phosphate of potash ($3KO, PO_5$), which is found in these ashes, is most remarkable. The author's view of the formation of these rings, is as follows:—A fungus is developed on a single spot of ground—sheds its seed, and dies:—on the spot where it grew it leaves a valuable manuring of phosphoric acid and alkalies—some magnesia and a little sulphate of lime. Another fungus might undoubtedly grow on the same spot again; but upon the death of the first, the ground becomes occupied by a vigorous crop of grass rising like a phœnix on the ashes of its predecessor. It would thus appear that the increase of these fairy-rings is due to the large quantity of phosphated alkali, magnesia, &c., secreted by these fungi; and, whilst they are extending themselves in search of the additional food which they require, they leave, on decaying, a most abundant crop of nutriment for the grass.

'On the Expansion of Salts,' by Dr. L. Playfair and Mr. Joule.—This communication was a continuation of the researches of Messrs. Playfair and Joule on the specific gravities and atomic volumes of bodies. The expansion of salts was now the subject engaging their attention; and they had been induced to modify the forms of their apparatus to meet the exigencies of this investigation. As in the other cases, spirits of turpentine was employed, and arrangements were made by which the expansion of the salts was indicated by the displacement of the turpentine from a graduated capillary tube. In this way, they had determined the expansion of eighteen salts and oxides. As this investigation is at present incomplete, we have refrained from entering into any detail. Indeed, the paper was little more than a description of the apparatus employed in this elaborate inquiry.

'Notices of Experiments in Thermo-Electricity,' by Dr. J. Reade.—Some experiments were shown, by which a brass bar covered with paper, placed in the focus of a reflecting sheet of copper bent into a semi-circular form, and at a short distance from a spirit lamp, was made to revolve. This Dr. Reade thought to be due to the influence of thermo-electricity.

Dr. Faraday, however, showed that a strong current of air circulated around the copper and the lamp, sufficient to take the smoke of ignited paper rapidly around; and thus, in all probability, the rotation must be referred to mere currents of air, and not to any thermo-electrical action.

Mr. E. J. Knowles made some remarks on a singular appearance which he had witnessed in the flame of a common mould candle.

THURSDAY.

SECTION C.—GEOLOGY.

President—Mr. L. Horner.

Vice-Presidents—The Dean of Westminster, Sir H. T. De la Beche, Dr. W. H. Fitton, Mr. W. Hopkins, (*For Geography*) Mr. G. B. Greenough.

Secretaries—Mr. R. A. Austen, Prof. Oldham, Mr. J. H. Norris (*For Geography*) Mr. C. T. Beke.

Committee—Prof. Agassiz, Prof. Ansted, Mons. Le Blanc, Major Clerke, Messrs. C. Darwin, Duncan, Prof. E. Forbes, Mr. G. W. Featherstonhaugh, Mons. Graves, Messrs. R. Hutton, W. J. Hamilton, Capt. Ibbetson, Mr. W. King, Mons. de Koninck, Mr. C. Lyell, Prof. Von Middendorf, Mr. R. Mallet, Marquis of Northampton, Mons. de Pinteville, Messrs. W. Sanders, W. Sharpe, Rev. Mr. Walker, Mr. J. Yates, Lieut.-Col. Colby, Messrs. G. W. Ormerod, J. Phillips, Sir P. de M. G. Egerton, Bart., Dr. Fyfe Smith, Hon. and Rev. C. Harris, Mr. J. B. Jukes, Capt. James.

'On the Artesian Well on the Southampton Common,' by R. Keele, Esq.—The town of Southampton has hitherto depended for a supply of fresh water to private wells, which are attached to almost every house. They are sunk through a bed of gravel, and vary in depth from 10 to 20 or 25 feet,—at which depth the London clay is reached. An uncertain quantity has also been obtained from the public water-works, supplied by land springs. These sources being insufficient for a growing town, with 30,000 inhabitants, other modes of supply have long been contemplated. The river Test was considered too distant; and the commissioners could not accede to the terms proposed by the proprietor of the most convenient part of the river Itchen. In November, 1835, Mr. Clarke, of London, made an experimental boring on the Southampton Common, through 80 feet of alluvial strata, 300 feet of London clay, and about 100 feet of plastic clay; and afterwards the boring was extended 50 feet into the chalk. The supply was ample; and an Act of Parliament was obtained for providing the means necessary to construct a well which should supply 40,000 cubic feet of water daily. Mr. Clarke estimated the expense at 7,000*l*. In 1837, a contract was made with Mr. Collyer, who proposed to sink an iron cylinder, having a diameter of thirteen feet, to the depth of 160 feet, and from that point to bore to the further depth of 400 feet, commencing with a bore of 30 inches, and gradually diminishing to one of 20. The estimate amounted to 9,980*l*. The cylinder was found inefficient; and a brick shaft, of 14 feet diameter, was continued to the intended depth of 160 feet. Two pumps were employed to raise the water, which amounted to 4,000 cubic feet per diem. Here, instead of commencing the boring, the brick

shaft was carried on, by advice of the consulting engineer. At the depth of 164 feet, the diameter of the shaft was reduced to 11 feet 6 inches. At this period, the candles could scarcely be kept lighted; and an air-tube of zinc, with a pair of bellows worked by the steam-engine, was attached, for the purpose of ventilation. Masses of limestone, five or six tons in weight, had frequently to be raised. There was a considerable escape of gas from the sides and bottom of the well, which, together with the vapour that filled the shaft and the impure air caused by so many men at work, occasioned some alarm. At the depth of 214 feet, the shaft was reduced to 10 feet in diameter; and at the depth of 270 feet, to 8 feet 6 inches. The work was then suspended till more powerful pumps could be obtained. On emptying the shaft, and deepening it 23 feet, the influx of water became so great that iron cylinders, 7 feet in diameter, were again resorted to, instead of brick-work. At 322½ feet the brick shaft was resumed; —the quantity of water raised by the engine amounted to 30,240 gallons in twenty-four hours. At 380 feet from the top of the well, the plastic clay was reached, and the brick shaft continued through it to the chalk. Little or no sand or water was found in the plastic clay. The work was continued, day and night, till December 4, 1841, when the shaft was 520 feet deep;—about three gallons of water flowed into it per minute, its temperature at the bottom ranging from 61° to 62° Fah. The atmosphere of the well at 50 feet was 54°; at 160 feet, 60°; at 343 feet, 65°. The temperature of water at the surface was 44°. In March, 1842, the shaft measured 562 feet; and the pumping having been suspended for a week, the water rose 400 feet, amounting in quantity to 21,578 cubic feet. This supply being insufficient, the contractors commenced boring with a 7½-inch augur, attached to a rod, conducted to the bottom of the shaft by an iron tube, fixed in the centre of the well. The total depth of the shaft and boring amounts to 1,260 feet; and at the time the boring was suspended the water rose to within 40 feet of the surface. In 1845, during upwards of four months' daily pumping, the delivery of water was at the rate of upwards of 1,500,000 gallons per month; and afterwards, in eight days, the quantity raised exceeded 725,000 gallons. When the pumping was discontinued in November, 1845, the water rose, as before, to within 40 feet of the surface.

Mr. PHILLIPS, being called upon to speak of the fossils obtained in the sinking, stated that he recognized the limestone of Bognor with its Pectunculi, the Venericardiæ and Turritellæ of Brachlestan, and the Fusi, &c. of Barton. There was also a fine Nautilus, and a number of fusiform Septaria. The series of strata seen in the Isle of Wight were well shown in their proper order in this shaft.—Mr. HOPKINS, in reply to questions as to the advantage of continuing the operations, and the probable supply, stated that the example of the artesian well at Grenelle was calculated to give confidence in similar undertakings where a general analogy existed. The comparison, however, between Paris and Southampton was not complete. Paris was in the very centre of a tertiary basin, and probably over the deepest part; the water flowed to it in all directions; the inclination of the beds, too, was gentle; and there were no dislocations. Here, however, the chalk of North Hampshire inclined gradually towards the sea, and, passing under it, rose again, with a much greater inclination, in the Isle of Wight. There was no reason for supposing that Southampton was situated over the lowest part of this basin; and since, in the Isle of Wight, there was an enormous dislocation, there might be other dislocations or fissures in the intermediate space, which might afford an outlet for the water below. The height to which water would rise in an artesian well would be affected by the construction of other wells in its neighbourhood. The first artesian well at Cambridge rose 15 feet above the surface, but other wells had reduced its height to 4 feet below the surface. The borings in these instances were only 4 or 5 inches in diameter; but the supply was large, and independent of the existence of any large caverns or fissures. The water came from the iron-sands below the gault clay,—it had a slightly ferruginous taste, but was quite good. No water was obtained in the chalk,—nor could an artesian well be expected in that formation, which is too permeable to hold water. In conclusion, Mr. Hopkins said that he should himself recommend the continuation of the boring, as the trial was not complete till the beds below the chalk were reached.—Mr. GREENOUGH remarked on the extent of the dislocation which extends through the centre of the Isle of Wight. He believed geologists had done more good by discouraging hopeless speculations than by encouraging useful experiments; and they would not give a positive recommendation, except from experience. He alluded to the artesian wells of Lincolnshire, in a district before scarcely habitable, on account of the scarcity of fresh water, and the thickness of clay impervious to water. Porous beds, resting upon others which were not porous, could alone afford a supply of water.

'On the Origin of the Coal of Silesia,' by Prof. GOEPPERT, of Breslau.—This paper was an abstract of an essay which received the prize offered by the Society of Sciences of Holland, at Haerlem, in 1844. Prof. Goeppert remarks, that hitherto few well-preserved plants had been obtained from the coal itself, but its composition had been inferred from the plants which lie in the associated shales. In the coal-fields of Upper and Lower Silesia, which yield four millions of tons a-year, he had met with extensive layers, in which the plants were so well preserved, that he could distinguish coal formed from Sigillariæ from that formed by Araucariæ or Lepidodendra. In most instances the bark alone was preserved—the specimens being flattened; but the Araucariæ, being much harder than the rest, often retained their woody tissue and medullary rays. The species, 80 in number, were found to be differently grouped in the various coal strata, and also under different conditions; and this, with the delicate preservation of the ferns, the multitude of upright stems, of which 200 have already been observed, and the uniform thickness of the strata over a space of many miles, are considered by the author a proof of tranquil deposition on the present localities. The Silesian coal strata are from 30 to 60 feet thick; a larger portion of which M. Goeppert supposes to have accumulated after the manner of *peat*,—during the lapse of time. He has ascertained that, by keeping vegetables in boiling water for three months or a year, they are converted into brown coal *(lignite)*, and, by the addition of a small quantity of sulphate of iron, a salt which occurs commonly in coal, acquire, at last, a totally black, coal-like condition.—Sir R. I. MURCHISON expressed his readiness to receive this explanation for the origin of many extensive coal strata. There were other large coal-fields to which the explanation would not apply at all, —the materials having certainly been drifted to a distance by currents of water.—Mr. J. PHILLIPS remarked, that although even fragments of coal-plants were uncommon in the coal of England, yet, with the aid of the microscope, *coniferous tissue* might be detected in much of the fibrous coal, which differed only in being less bituminous than the rest. In the ashes of coal, siliceous casts of vegetable tissue were always to be found; and Mr. Bowerbank had detected traces of structure on the fractured surfaces of ordinary solid coal.

'On the Northwich Salt-Field,' by G. W. ORMEROD.—The rock-salt of Northwich is part of the New Red Sandstone series: it forms two strata, the uppermost of which is 75 feet thick, and the lower 105 feet; they are separated by 30 feet of stone, containing veins of salt. Throughout the district, the brine is reached at the same level—about 87 feet—below the River Weaver; and varies uniformly in all the shafts when any change takes place. In this district there are three faults, which have displaced the strata to a considerable amount. The first fault is a throw-down to the east of 400 yards; it intersects the South Lancashire coal-field, and passes into Cheshire, along the valley to the west of Bellefield and Hill Cliff, a range of New Red Sandstone (*bunter sandstein*), capped by the ripple-marked beds denominated "water-stones," in which the foot-marks of the *Cheirotherium* occur; the summit is 352 feet above the level of the sea. Near Northwich this fault appears to pass into another, which is an *upthrow* to the east of 400 feet, and passes also through the South Lancashire coal-field, by Wigan Churd, and east of Warrington into Cheshire, when it continues along the valley east of the Bellefield range. Through the coal district this line is proved by numerous workings; and in the salt district by the extent to which the workings and the sinking of the land have gone. The third great fault, passing by Northwich, ranges by south-west to north-east, passing near Holt, and running up the valley between the Peckforton Hills and the low range occupying the east side of the Dee. This valley is occupied by marl, in which saline springs are frequent. At Northwich the line runs in a north-easterly direction, forming the north-west boundary of the rock-salt. The subsidences already mentioned as taking place in the salt district are either sudden or gradual, and have been noticed for many years. At the yard of the Weaver Navigation Office the sinking is at least 6 feet; and on the road from that place to Winnington the depressions are shown by cracks in houses and visible subsidences in the land. From the same cause, a lock and a factory have required to be removed, meadows are laid under water, and the towing-path by the river has had to be raised. The Whitton Brook has also been made 6 feet deeper, to enable the navigation to proceed as formerly.—Mr. PHILLIPS observed, that one of these faults laid down in Mr. Ormerod's map was 50 miles long, and one was in direction of the magnetic meridian. In the South of England, the New Red Sandstone became much thinner, less complicated, and was deficient in salt.—Sir H. DE LA BECHE stated that the variegated tints of the water-stones were due to a difference in the amount of oxydation of the ores they contained. The decomposition of vegetable matter had, in some places, reduced the per-oxide to the condition, comparatively, of a prot-oxide,—changing the red colour of the rock to a pale blue.—Mr. GREENOUGH remarked, that salt existed below the coal-measures in Durham, as well as in the New Red Sandstone, whilst the salt beds at the base of the Carpathians were of tertiary age.—Mr. W. SHARPE withdrew his paper which had been announced, on the same subject, recommending a visit to one of the salt-mines;—the shaft of which was 112 yards deep, but so large, dry, and clean, that ladies might descend with safety; at the bottom was a square excavation in the rock-salt, 15 feet high, and 400 yards each way —the roof supported by several hundred pillars of salt of a beautiful red colour. When illuminated by blue lights, it formed a magnificent exhibition.

FRIDAY.

'On the Arrangement and Nomenclature of some of the Subcretaceous Strata,' by Dr. FITTON.—This paper contained a summary of the latest inquiries upon the subject, and a tabulated arrangement of the species in a new collection of fossils, made by the author, in the cliff sections near Atherfield, from the gault down to the weald clay. The specimens had been named by Mr. Morris, from his own observations and comparison with the series at the Geological Society, catalogued by Mr. Forbes. 1.—In this table, about 150 species are exhibited in their respective places in the series of strata:—thus affording numerous results as to the number and distribution of the fossils. The accumulation of species in the lower part of the table is very remarkable; —about 130 species out of the total number originating within 150 feet of the bottom, while not more than 20 other species originate in the remaining portion,—the thickness of the entire section being 800 feet. The absolute number of species also rapidly diminishes upward,—so that, in the beds near the top, even indications of fossils are rare; though near Shanklin, and near Folkestone, the fossils in these upper beds are more numerous and distinct. These facts obviously indicate only one series of fossils during a period of continuous deposition; the gault, with its peculiar and characteristic fossils, being immediately above. 2.—These results accord with the palæontological view of Prof. Forbes, given by himself and Capt. Ibbetson, in a paper, published in the Geological Society's 'Journal.' 3.—The upper and less fossiliferous portion of the section is separated, here, from the lower beds by a very remarkable group of ferruginous concretions, which occurs in a corresponding place at Parham Park, in Sussex; Horseledge, west of Shanklin; and at Sandgate, in Kent: including in all those situations the same fossils, Thetis, Gervillia, Trigonia, Rostellaria, &c. 4.—From the general distribution of species above stated, and the great variation of composition and proportions observable in the sections at other places, it is inferred that subdivisions, founded on groups of species,

cannot be expected to be either generally prevalent or very precise. 5.—The remarkable fossiliferous deposit of Neufchatel (*Terrain Neocomien*) appears to be the equivalent of the lowest part only of the Atherfield section, the upper division being absent. In most of the published sections of this group in France and other places a similar upper division exists, under the names of *sables verts, sable ferrugineux, jaune*, &c. The Atherfield section, therefore, includes the *Terrain Neocomien*, with the addition of the last-mentioned group,—which at Black-gang Chine amounts to a thickness of not less than 250 feet.

Prof. E. Forbes stated that there were two points in the present inquiry:—First, what correspondence there was between these beds in the Isle of Wight and those of the Continent? and secondly, what name should be given to them, and on what principle? The answer to the first question mainly depended on the fossils. We possessed all the equivalents of the lowest cretaceous system; and if anything more existed abroad, it was only a portion of what we had in England, and could not be separated under a distinct name. The principal difference between the Fauna of the continental Neocomian and the English lower greensand depended upon the abundance of Gasteropods and Cephalopods in the former, and of acephalous bivalves in the latter. He objected to the terms upper and lower greensand, as implying a relation which did not exist, and recommended the adoption of new names.—Capt. Ibbetson remarked that the beds of upper greensand in the Isle of Wight were unconformable to, or had a different inclination from, those of the lower greensand.—Mr. Austen argued in favour of the adoption of the term Neocomian, contending that it was not a mere question of *names*, but regarded the physical condition of the globe at a certain period, the distribution of its land and water, and of the animals which inhabited it. The lower cretaceous strata had been deposited in the deeper part of the sea which followed the Wealden period. The lakes and estuaries of the Wealden were necessarily their deepest parts; and the Neocomian beds always rested upon Wealden, whilst each succeeding stratum occupied a wider area and overlapped its predecessors. We were only on the edge of the cretaceous series, and might still detect in Dorsetshire shingle beds, marking the seabeach of that period. The whole cretaceous system of England was but a part of a formation having a vast geographical range, and presented very exceptional characters: so that we could not claim to consider our series the type to which all others should be referred.

Sir R. I. Murchison presented, on the part of Dr. Mantell, a Geological Map of the Isle of Wight, and the preliminary pages of a work devoted to the description of the island.

'On the Occurrence of Cypris in a part of the Tertiary Freshwater Strata of the Isle of Wight,' by J. Prestwich, Jun.—A species belonging to this genus of small freshwater crustaceans abounds in the tertiary lacustrine formation of Auvergne, and others occur in the upper and lower beds of the Paris basin, and are (*C. punctata*) in the plastic clay. In the English tertiary they are extremely rare; in the London basin only a marine Fauna (Cytherina) occurs, and Mr. Lyell mentions the rare occurrence of an undescribed species in the freshwater strata of Hordwell Cliff. At Hempstead Cliff, about one mile and a half east of Yarmouth, Mr. Prestwich found a new species of Cypris in considerable abundance, the cliff being composed chiefly of beds of clay and marl, containing freshwater shells, impressions of plants and seed vessels. Amongst the shells are new species of Potamides and Melania.

'On Certain Deviations of the Plumb-line from its Mean Direction, as observed in the neighbourhood of Shanklin Down, in the Isle of Wight, during the progress of the Ordnance Survey,' by Mr. W. Hopkins.—The difference of latitude between Greenwich and the station of the Ordnance surveyors at Dunnose, on the *north* side of Shanklin Down, as determined by triangulation, was *greater* by 2·22 seconds, than as determined by zenith sector observations. When, however, a new station was chosen on the *south* side of Shanklin Down, the difference of latitude, as determined by triangulation, was *less* by 3·09 seconds than it appeared to be when determined by the zenith sector. These discrepancies would be accounted for, if the mass intervening between the stations at Shanklin Down were sufficient to produce, by its attraction on the plumb-line, the observed deviations. The requisite calculations for proving the adequacy of this cause had not been made; the tendency, however, would necessarily be to produce effects of the same nature as those observed; and the author thought it probable that the intensity of the attraction of the hill would be found sufficient to account for the phenomena.

Capt. Ibbetson and Prof. Forbes exhibited models and sections of various parts of the Isle of Wight, and pointed out the localities and geological features most interesting to visitors.

Capt. Ibbetson exhibited sections of the Great Oolite, Fuller's Earth, and Inferior Oolite, as seen in the Great Western Railway cuttings and tunnels near Sapperton, in Gloucestershire.

'On the Age of the Silurian Limestone of Hay Head, near Barr Beacon, in Staffordshire,' by J. Buckman.—The limestone rocks and shale of Hay Head, celebrated as the original locality from whence was obtained the Barr Trilobite (*Bumastus barriensis*), were referred by Sir R. I. Murchison to the Wenlock series of the upper Silurian system. This opinion having been doubted by Burmeister, who places the Barr Trilobite in the lower Silurian division, Mr. Buckman commenced an examination of all the fossils associated with that species at Hay Head. Of the fifty-six species there obtained, fifty-three belong exclusively to the upper Silurian beds, and have also been found in the Wenlock series of Dudley; whilst *only one*, and that a doubtful species, can be referred to a lower bed. The author hence concludes that Sir R. I. Murchison's sections and notes upon this locality are correct; though he considers it probable that a seam of the coal measures occupies a small tract in the valley between Hay Head and the town of Walsall.

THURSDAY.

Section D.—ZOOLOGY AND BOTANY.

President—Sir J. Richardson.
Vice-Presidents—Mr. C. Darwin, Dr. R. Brown, Prof. E. Forbes, Mr. H. E. Strickland.
Secretaries—Dr. Lankester, Messrs. T. V. Wollaston, H. Wooldridge.
Committee—Messrs. W. Spence, N. M. Priaulx, Dr. Carpenter, Messrs. G. T. Fox, J. Hogg, Von Middendorf, Messrs. R. Ball, W. Thompson, R. M'Andrew, Prof. Ansted, Prof. Agassiz, Messrs. H. Watson, C. C. Babington, G. Newport, Prof. Owen, Rev. L. Jenyns, Mr. W. Yarrell, Prof. Bell, Prof. Balfour, Messrs. R. Patterson, J. Gould, Prof. Allman, Mr. A. Strickland, Prof. Lindley, Prof. Jones, Mr. C. Peach, Rev. J. Barlow, Messrs. J. Bullar, W. Ogilby, W. Burchell, W. H. Lloyd, A. P. Prevost, Mr. J. S. Bowerbank, Prof. Royle, Dr. G. Lloyd, Mr. G. Busk, Dr. H. Falconer, Dr. Bell Salter, Rev. W. Hincks.

The President, in opening the meeting, stated that he had great pleasure in informing the members that Haslar Hospital, the Museum, the Clarence Victualling Yard at Gosport, and the Dockyard at Portsmouth, could be visited by members on presenting their tickets.

Mr. J. Hogg commenced the business by reading some additions to his 'Synopsis of the Classification of the Genera of British Birds.'—This paper, which was purely of a technical character, gave the author's arrangement of the entire number of the *Genera* of *British* Birds,—and so it completed the former portion of that classification which he had communicated, two years ago, at the meeting of the Association at York.

Dr. Lankester read over a list of the names of periodical birds, and the dates of their appearance and disappearance, at Llanrwst, in North Wales, by John Blackwall, Esq.

Mr. A. Strickland thought such lists as these were useless, as they only afforded information with regard to individual facts. So constant were many of the phenomena exhibited by animals that the day, and almost the hour, were known. Starlings, he knew, were hatched every year on the same day. Hawks were always taken from their nests on a particular day for hawking, or they could not be used.—Mr. C. C. Babington observed that the object of communications like those of Mr. Blackwall was to ascertain what phenomena were constant,—such as those which Mr. Strickland had mentioned,—and what were influenced by climate, and other external agents.—The President observed that weather frequently determined the appearance and disappearance of birds. Wild geese, on a fine day, would fly off; but, on meeting stormy or cold weather, would return. Many birds fed on insects which did not appear till certain plants appeared: and thus one was dependent on the other. The constancy of the appearance, or hatching of some birds depended on the constancy of their food.—Mr. Peach related several instances of the appearances of birds in Cornwall, at unusual periods, apparently determined by the existence of food.—Mr. H. E. Strickland remarked that the unusual mildness of the last winter had caused a scarcity of the field-fare, the redwing, &c.;—and, in consequence, the haws, which were usually stripped from the hedges, were to be seen on the bushes in the spring at the same time with the flowers.

Mr. Wollaston read a notice from Mr. William King, of some new species of animals, found on the coast of Northumberland.

Prof. E. Forbes pointed out the importance of such researches as these in relation to geology. The animals found by Mr. King were amongst those which were also found in the pleistocene beds of the tertiary strata. There was one remarkable feature connected with these researches of Mr. King, and that was the confirmation it afforded of the truthfulness of the observations of Capt. Laskey,—who had, many years ago, announced the discovery of some of the same animals. One of Laskey's species was *Terebratula cetacea*, which had been found by Mr. King. Another species was *Panopæa Aldrovandi*. The statement of the existence of such animals in our seas, by Laskey, had always been previously doubted.

The President exhibited a specimen of a beetle (*Blaps mortisaga*), which had been found imbedded in some artificial concrete, where it must have been, at least, sixteen years; and yet, when the animal was brought to him, it was alive, and lived for six weeks after.—Mr. Spence said that the ordinary duration of life of the *Blaps mortisaga* was two or three years; and that it should exist so long was very remarkable;—and he thought the circumstance deserved to be fully inquired into.—Mr. Darwin stated that the *Blaps mortisaga* was very tenacious of life. He once left one, in a covered vessel, without food for a year, without its being killed. He had also dropped upon one hydrocyanic acid, but it walked off quite unaffected by the poison.—Mr. Patterson stated that the larvæ did not possess such tenacity of life, as some he had kept had speedily died.

Prof. Owen read a paper, 'On the Homologies of the Bones collectively called "temporal" in Human Anatomy.' The author commenced by referring to the definition of the term "*homology*" as contradistinguished from "*analogy*," given in the glossary in the 'Lectures on Invertebrata,' 8vo., 1843,—the sense in which it is there used being the same as that in which it has been used by several German and French anatomists; though, as the Professor remarked, in geometry, those sides of similar figures which are opposite to equal and corresponding angles are sometimes said to be "homologous;" and in logic, the term homologous has been applied as a synonym of homonymous, to such things as agree in name but are of different natures. In anatomy, however, its meaning is just the reverse, signifying things or parts which are of the same essential nature, whatever different forms or names they may bear in different animal bodies. Thus the fore-limb of the *Draco volans* being composed of essentially the same parts as the wing of the *bird* is *homologous* with it; but the wing of the *draco*, being composed of different parts, viz. the ribs and skin, is not homologous, but is analogous to the wing of the bird, as having a similar relation of function. Prof. Owen gave several other instances of "homology" and "analogy," and proceeded to define the different kinds of "homology." The widest relation of homology is that in which a part or series of parts stands to the fundamental vertebrate type of organization:—thus, when the "mastoid" process of the temporal bone of Anthropotomy is said to be "the parapophysis of the parietal vertebra," its *general* homology is enunciated. When it is said to repeat, in its vertebra, or natural segment of the skeleton, the par-occipital of the occipital vertebra, and the post-frontal of the frontal vertebra, its *serial* homology is indicated, just as when we say that the radius in the arm answers to the tibia in the leg, one rib to another, in the successive series of skeleton-segments. When the essential correspondence of the mastoid process of the temporal

in man with the distinct bone called "mastoid" by Cuvier and "temporal" by Spix and Agassiz, in the skull of a fish is shown, its *special* homology is determined. In the present communication, Prof. Owen proposed to consider the *general*, *serial*, and *special* homologies of the parts which, from their peculiar mutual confluence in man, have been termed, collectively, the "temporal bone" in human anatomy. The nature and signification of the different constituents of this complex bone have excited much discussion, and given rise to great diversity of opinion amongst the chief comparative anatomists of Germany and France. Prof. Owen commenced with the consideration of these special homologies; but premised a definition of the ideal type of the vertebrate skeleton, in order that the allusions to the *general* homologies of the parts might be understood. The skeleton of a vertebrate animal in its widest signification included land and dry parts referable to the visceral organs, to the skin, and to moto-sensory systems, and these primary divisions had been termed respectively "splanchno-skeleton," "exo or dermo-skeleton," and "endo or neuro-skeleton." He should consider the arrangement of the parts of the endo-skeleton only with respect to their relations to a common or fundamental type. They formed a series of segments succeeding each other in the axis of the body, with or without appendages diverging from them. Each segment consisted, typically, of a central piece, or "body," of an upper or neural arch, formed by two "neurapophyses" and a neural spine; of an under or hæmal arch, formed of two "hæmapophyses" and a hæmal spine; of two "parapophyses" or lower transverse processes; of two "pleurapophyses" or vertebral ribs. Besides these primarily distinct and independent elements, there were parts continued out from them called processes, as the upper transverse processes or "diapophyses," and the oblique or articular processes, called "zyapophyses." The natural arrangement of the endo-skeleton bones of the skull was in a series of four segments conformable to the above typical structure of a vertebra, with lateral or diverging appendages in some classes. In the present communication the author confined his observations to the homologies of those bones of the skull called, collectively, the "temporal" bone in Anthropotomy. It was well known to consist of distinct parts in the human embryo, which afterwards coalesced; these were the "squamosal," or part answering to the "squamous and zygomatic processes;" the "tympanic," or "external auditory process;" the "mastoid," with which the "petrosal," or petrous part of the temporal was connate; and the "stylo-hyal," or "styloid process." The squamosal was traced from man through the lower mammalia, progressively decreasing in extent and forming less and less of the walls of the cranial cavity, until it could be removed without exposing that cavity, as in the sheep and whale. It is very small in the monotremes; is reduced to its zygomatic process in the bird; is an irregular osseous column wedged between the malar and tympanic lines in the crocodile; and disappears, according to the author, with the disappearance of the true zygomatic arch, in batrachia and fishes. The bipartite condition of the tympanic pedicle in the batrachia, and its quadripartite division in most osseous fishes, did not essentially affect the homology of such pedicle with the simple tympanic pedicle in the saurian and bird, but was explicable, Prof. Owen thought, on the principle of vegetative repetition and subdivision of parts characteristic of inferior organisms; but a condition, the final purpose of which in giving elastic flexibility to the large pedicle supporting the lower jaw and hyoid apparatus in fishes, was clearly appreciable. With regard to the mastoid element it was shown to increase in extent as the squamosal diminished; especially in the lowest mammals, as the echidna, where it formed a much larger proportion of the proper walls of the cranium, was connected with the occiput, sphenoid and parietal, as well as with the squamosal, and was connate, as usual, with the petrosal. It was traced, retaining these functions and increasing in size and connexions, through birds, where it was mistaken by Cuvier and Hallmann for the squamosal, and through reptilia to fishes, where Cuvier had recognized its special homology with the mammalian mastoid,—but was contended by Spix and Agassiz to be the squamous element of the temporal. Prof. Owen adduced arguments in support of the Cuvierian view, and concluded by discussing the much-mooted question of the homology of the petrosal in reptiles and fishes: the part so called in fishes by Hallman, Prof. Owen agreed with Cuvier and Agassiz, and regarding as the great ala of the sphenoid: he also showed that the part called by Cuvier petrosal (rocher) in reptiles, was the ala-sphenoid.

Prof. Agassiz said that he had intended to have brought this subject before the notice of the Association, but he was glad to find that Prof. Owen had taken it up. It was to British naturalists that natural history was first indebted for a distinction between analogy and affinity, and that which Prof. Owen had pointed out between analogy and homology was equally important. As an instance of the importance of studying both the analogy and homology of an organ, he exhibited a specimen of a fossil which, from a mistaken homology, he had regarded as the bone of a reptile, but had since found to be that of a fish. With regard to his own views, which Prof. Owen had opposed, it was enough for him to know that Prof. Owen had opposed them to lead to a rigorous re-examination.

Prof. Owen urged on Prof. Agassiz the studying this subject, on account of the facilities his great knowledge of the structure of fishes afforded for its further developement.

Dr. Lankester read notices of some new and rare British species of naked Mollusca, by Joshua Alder and Albany Hancock.—The first species was a small mollusk belonging to the order *Infero branchiata*. This animal closely resembled the animals figured by M. de Quatrefages under the generic names of Pelta and Chalides, and placed by him as the lowest forms of his new order, *Phlebenterata*. This animal strongly resembles the *Limapontia nigra* of Dr. Johnston; but whether it be identical with that animal or not, the authors were fully convinced that its characters had been imperfectly understood by M. de Quatrefages. The other naked mollusks found by the authors were a new species of *Eumenis Eolis Drummondi*, *Eolis alba*, and *Goniodoris castanea*.

Prof. Allman expressed his entire concurrence in the remarks made by the authors on the imperfect evidence on which M. de Quatrefages had established his order—*Phlebenterata*.

'On the Pulmograde Medusæ of the British Seas,' by Prof. E. Forbes.—At the Birmingham Meeting, in 1839, the author, in conjunction with Prof. Goodsir, brought forward a first essay towards an investigation of the British Acalephæ, selecting the ciliograde species for illustration. Since that time he has yearly availed himself of every opportunity of pursuing the inquiry, but has abstained from publishing, hoping to gain more complete knowledge of a difficult and much confused branch of zoology. Having now, however, examined more than twice the recorded number of British Medusæ, and become acquainted with numerous new specific and several new generic forms of great interest to the naturalist, he ventures to lay before the Section an outline of the data in his possession. These data are in great part due to the opportunities afforded him by his voyages round the coasts of Britain with his friend, Mr. M'Andrew. After pointing out the difficulties attending the study of these animals, and giving a brief view of the present state of the subject generally, Prof. Forbes insisted on the necessity in future of naturalists abstaining from publishing imperfect observations respecting them, and urged the adoption of the descriptions of Milne Edwards, Sars, and Will as models for those who were ready seriously to engage in the study. He called attention to the important observations on their developement lately made by his friend Prof. Reid, of St. Andrews, and expressed a hope that ere long the return of the Arctic Expedition would bring a great mass of new materials of the most accurate description through the observations of Mr. H. Goodsir. In grouping the British species, Prof. Forbes calls attention to the mutual correspondence of certain characters; viz. of the condition of the reproductive, digestive, and sensitive systems. He proposes to group all the British Medusæ under such as have hooded and such as have naked ocelli. The first character is combined with a conspicuous and comparatively complicated reproductive system, and a ramified gastrovascular apparatus. All the pulmograda with naked ocelli have simple vessels, with one exception,—a new and most beautiful generic form, the type of a sub-section by itself. The remainder form three natural groups, as will be seen in the following general table, exhibiting the arrangement of the British Pulmograde Medusæ:—

1st Section.—Hooded-eyed; ramified gastrovascular system.

1st Genus.—*Rhizostoma* (Cuvier). 1 species, *R. Aldrovandi*.
2nd Genus.—*Cassiopea* (Peron). 1 sp. *C. lunulata*.
3rd Genus.—*Pelagia* (Peron). 1 sp. *P. cyanella*, one of the most phosphorescent and beautiful of European Medusæ, now first announced as British, having been taken during the past month by Mr. M'Andrew and Prof. Forbes off the coast of Cornwall.
4th Genus.—*Chrysaora* (Peron). 1 sp. *C. hyssoscella*.
5th Genus.—*Cyanea* (Peron). 2 sp. *C. capillata* and *C. Lamarckii*, both common; very large, stinging Medusæ.
6th Genus.—*Medusa* (Linnæus, Escholtz—Aurelia, Peron). 2 sp. *M. aurita* and *M. cruciata* (the latter is the Medusa so abundant in Southampton Harbour. It has white ocelli.

Many more spurious species of Cyanea, Medusa, and other genera are recorded by Peron, Lesson, and others, and enumerated as inhabitants of the British Channel. After careful consideration, they have been rejected as mere varieties from this arrangement. Certain forms belonging to this section recorded by Pennant and Templeton are also rejected as too imperfectly observed to be of any service to science.

2nd Section.—Pulmograda with naked ocelli.

1st Family.—Vessels branched.
7th Genus.—*Willsia* (new, sp. *W. stellata* founded on a beautiful little Medusa with six starlike ovaries and branched vessels. It is abundant in the British Channel and on the west coast of Scotland.

2nd Family.—Vessels simple; ovaries convoluted and lining the pedunculated stomach.
8th Genus.—*Turris* (Lesson; Eirene, Escholtz), 2 sp., *T. digitale* of O. Fabricius (Zetland) and *T. neglecta*, Lesson, the *Cyanea coccinea* of Davis; British Channel. Very highly organized Medusæ, closely approaching Actineæ.
9th Genus.—*Saphenia*, (Escholtz). 1 sp., *S. dinema*, Peron. Devon, Zetland.
10th Genus.—*Oceania*, (Peron—Tiara, Lesson) 4 sp., one being the "Geryonia octona" of Fleming; the other three are new.

3rd Family.—Vessels simple, ovaries in the course of the vessels, on the subumbrella.
a.—With eight vessels.
11th Genus.—*Equorea* (Peron)—or, perhaps deserving of a distinct appellation; 1 sp., common on the Scotch coast; it is the "*Milicertum campanulatum*" of Ehrenberg (not of Escholtz), "*Oceania octocostata*" of Sars, and "*Thaumantias Milleri*" of Mr. Landsborough, and "*Æquorea octocostata*" of Lesson. It has long yellow ovaries.
12th Genus.—*Circe* (Mertens). Ovaries 8 minute. 1 sp. *C. rosea*. Zetland, new.
b.—With four vessels.
14th Genus.—*Thaumantias* (Escholtz); ovaries four, ovate, clavate or linear, stomach short; 19 British species, of which 12 are new and undescribed. All very distinct from each other.
15th Genus.—*Slabberia* (new), founded for a singular little Medusa remarkable for its extremely linear ovaries, long proboscis, and the developement of an ocellated bulb at the end as well as at the base of each tentacle, *S. halterata*; coast of Cornwall.
16th Genus.—*Geryonia* (Peron), 1 sp., new, *G. appendiculata*. British Channel.
17th Genus.—*Tima* (Escholtz?) *T. Bairdii* of Johnston; common on the east coast of Scotland.

4th Family.—Vessels simple; ovary in substance of peduncle. Gemmiparous.
A.—Peduncle with lateral lobes; tentacula fasciculated.
18th Genus.—*Bugainvillia* (Lesson—*Hippocrene* Brandt), with 4 fascicles of tentacles. 3 sp., 2 new.
19th Genus.—*Lizzia* (new, with 8 fascicles of tentacles and unequal lobes to peduncle), founded for the *Cytaïs octopunctata* of Sars, which, with two other undescribed species, inhabits the Zetland seas.
B.—Peduncles inflated; tentacula not fasciculated.
20th Genus.—*Moodceria* (new). 1 sp. from the Hebrides.
C.—Peduncle elongate; tentacula not fasciculated.
a. With four tentacles.
21st Genus.—*Sarsia* (Lesson). 4 British sp.
b. With one tentacle only developed.
22nd Genus.—*Stecnstrupia* (new), 3 sp.

In all there are fifty species of British Pulmograda known to Prof. Forbes, excluding doubtful forms and varieties. Of these, fifty-nine only had been previously recorded as British, and of the remainder, all but five are undescribed.

Prof. Forbes also exhibited some living specimens of the lancelot (*Amphioxus lanceolatus* of Yarrell), of

a holothuria, and also of a species of Medusa found in the Southampton Water.

Prof. Agassiz inquired if Prof. Forbes had confirmed the views of Steenstrup on the alternations of generation in the family of Acalephs.—Prof. Forbes stated that as far as he had examined, Steenstrup was perfectly correct, and he had the greatest confidence in his observations and deductions.—The President congratulated the Meeting on this very important contribution to the natural history of an obscure class of animals;—and, after some observations from the Marquis of Northampton and Dr. Robinson commending the zeal of Mr. M'Andrew, who had placed his yacht at the disposal of Mr. Forbes, and recommending his example to others, the Section was adjourned.

FRIDAY.

'On the application of the method, discovered by the late Dr. Thibert, of modelling and colouring after nature all kinds of fishes,' by Dr. Knox.—These models were shown. They consisted of the vendace, the mackerel, the red spotted trout of England, and the Lochmaben trout. This method of modelling will ultimately be preferred to all others; even that in wax.

Mr. R. Ball thought this process superior to those in use.—Sir J. Richardson advised, that if the process was employed, the skin also should be preserved. He wished to know of Dr. Knox the method of Dr. Thibert.—Dr. Knox replied that he was not at liberty to state more than that it was a plaster cast painted.

Dr. Knox commenced a paper on the families of fishes Clupeadeæ, Corregoni, and Salmonideæ, the termination of which, on account of its length, was deferred until Monday.

Mr. W. Thompson read a paper 'On the Land Mollusca, Zoophytes and Algæ, of the Isle of Wight.'—This consisted of a list of animals and plants, with their localities. About eighty species of Algæ were enumerated.

A paper was read from Dr. Bell Salter, giving directions for the guidance of botanists in their excursion to the Isle of Wight, and giving a list of flowering plants of interest found in various parts of the island.

Mr. Gould exhibited several new species of humming birds from the Andes.

Prof. Allman read a paper on a new species of Algæ.

A paper was read, by Dr. Lankester, from Mr. B. Clarke, 'On the Foliage and Inflorescence of the genera Phyllantius and Xylophylla.'—The leafy appendages from which the flowers in most of the species of these genera spring have been described by authors in general, up to the present time, as branches. The author, having examined their structure and relations closely, has come to the conclusion that they are in almost all cases true leaves. Several species of the genera Phyllanthus and Xylophylla were described; and the author's views of their structure explained by drawings. In conclusion, he suggested whether the additional leaf-buds which are sometimes seen in the axils of leaves do not originate from the base of the petiole. Such buds occur in the genus Rubus; in some species of which the additional bud is developed beneath the axillary bud instead of on one side of it.

Mr. W. Hogan read a paper 'On Potatoes raised from Seed, as a means of preventing the extension of the prevailing disease.'—He first read extracts from German publications, giving the result of the trial of growing potatoes from the seed of the plant, which had been found to be successful as far as the production of tubers, and also the preventing the prevailing disease. Mr. Hogan had also tried the same process with success. The proceeding consisted in growing the seeds first in a hot-bed, and then transplanting. He considered this to be a successful way, because the most natural.

Mr. M. Stirling stated that he had, some time since, recommended to the Government of Sweden the plan of procuring potato seed, and deriving thence the crops. He had advised giving prizes for the best seedling potatoes, and he also recommended hybridizing the potato as a means of improvement.—Mr. W. Ogilby thought growing potatoes from the seeds might prevent the scurf and dry rot, but not the present wet rot of the potato. He quoted several instances in which seedling crops had been destroyed. He had been most successful in growing potatoes from a little tuber which sprung from the "eyes" of the old ones going to decay.—Dr. Crook attributed the attack in the year 1845 to "cold." The cold burst the vessels; and then came the disease. Heat produces the same effects as cold; it bursts the tissues of the vessels, and the consequence is disease.—Dr. Daubeny did not think that atmospheric changes had anything to do with the disease at all. He thought that the most satisfactory theory was that which referred the disease to fungi. He had understood that there was no potato disease in the neighbourhood of the copper furnaces in Swansea.—Dr. Buckland had lately visited Prof. Payen, who advocated the doctrine that the disease arose from fungi; and he (Dr. Buckland) believed so too. There was, in fact, a fungiferous miasm existing, which, like cholera, attacked not all, but those who were pre-disposed. It was the weak and intemperate that were attacked with cholera; it was the debilitated potato that had the disease. Extreme conditions of temperature debilitated the potato, and then it became diseased. The potatoes were suddenly attacked. He knew a case in which a whole field became diseased in three days. He believed the only remedy was mowing down the haulm of the potato the moment it was attacked.—Prof. L. Playfair was certain of one thing—and that was that the disease was not due to fungi. The nature of it was evident, as it could be produced artificially. If you scraped a potato and placed it in the open air it became diseased;—and, in the course of a few hours, the fungi would appear on it.—Mr. E. Solly believed that the disease depended on chemical changes, not on the attack of a fungus.—Mr. Bush had examined the diseased potatoes under the microscope, and in its early stages had always failed to discover the slightest indication of the existence of a fungus. As the disease advances, first one fungus appears, and then another,—and at last animal life. This was the progress of all vegetative decay. The disease always commences on the outside of the potato, and proceeds to the centre. He had also found the disease constantly attended with the developement of crystals of oxalate of lime.—Prof. Balfour stated that some fungi attacked living and healthy structures,—others only diseased ones. The fungus of the potato was a botrytis; which he believed attacked healthy structures.—Mr. A. Strickland said, in reference to Dr. Buckland's recommendation to mow down the potatoes, that, when his neighbours mowed down their potatoes he dug his up. They had lost nearly all theirs, whilst he had saved nearly all his.—Dr. Lankester observed on the want of evidence to support the theories of either cause or remedies that had been brought forward. Cold and heat had been assigned as causes, by destroying the tissues of the potato; but no destroyed tissues had been shown to exist. Debility had also been supposed to exist; but no proof was given of the existence of debility;—and the Dean of Westminster himself had admitted that he had seen the healthiest potatoes destroyed in three days. Positive observation was evidently opposed to the fungus theory. As to the remedies recommended, seedlings had been known to be attacked in more cases than they had escaped; and, therefore, sowing the seeds could not be recommended. Mowing down the stalks had not been more successful than letting them alone;—and it ought now to be known, that this Meeting had done nothing more valuable than to show the insufficiency of all theories and remedies hitherto advanced.

THURSDAY.

SECTION E.—PHYSIOLOGY.

President—Prof. Owen.
Vice-Presidents—Sir J. Clark, Dr. Roget, Dr. J. Forbes, Dr. Fowler.
Secretaries—Dr. Sargent, Dr. Laycock, Mr. C. P. Keele.
Committee—Sig. Matteucci, Dr. Clark, Dr. J. Bull, Dr. Engledue, Dr. R. Lee, Sir J. Richardson, Dr. C. J. B. Williams, Dr. W. Carpenter, Prof. Clark, Dr. King, Dr. Latham, Prof. Jones, Dr. White, Dr. Leeson, Dr. A. T. Thomson, Dr. J. Blake.

Prof. Owen in the chair.

Dr. Fowler read a paper 'On the Relations of Sensation to the higher Mental Process.'—The author observed that *man*, when viewed as a whole, should be considered as consisting of a body constituting the instrument of the mind, as the telescope is of the eye, *adjustable* but not *adjusted*: that its indications are perceived through the medium of the *muscular sense*, as the images reflected or refracted are the signs of external objects to the eye. Animals have adjustments ready made: man has to learn his. To see, to hear, and to touch, as an artist, or even in the common usages of life, a man just couched is as an infant; till he can adjust he sees, as we do with an unadjusted telescope, merely a vague sight. This gives rise to *search*. To *see* with intelligence we must *look*, that is, *exert* the combined adjustments: this constitutes an appreciable distinction between *sensation* and *perception*. The unadjusted impressions pass the mind as vague trains of thought, linked and associated sequences, the machinery of reveries and dreams. That searching to obtain well defined perceptions is effected by adjustments, attention to our own *working observation* will afford abundant proof; but a more protracted attention is necessary to prove, and to convince a man, that his *memory* and *powers of conception* equally depend on the mind's perception of *a reiteration of the adjustments of sensation*. But that this is so we have proof, in the *corporeal* actions induced by conception being like those produced by sensation by presence of the objects. This conception of savoury food excites secretion in the salivary glands—of an insult, the gesture of anger, &c. In *the power* of forming and giving fixity of tenure to conceptions men differ widely. It is to this power Dr. Johns alludes, when he says, that whatever can make the past, the distant and the future prevail over the present, raises us in the scale of thinking beings. Now Dr. Darwin and Dr. Brewster have shown that these conceptions are effected by adjustments of the body; in other words, that the "mind's eye," is, in fact, the body's eye. To have vivid conceptions disposable by our volition forms the orator, the poet, the sculptor and the painter.—After numerous illustrations of this faculty and allusions to it by the poets, the author stated that these sensations, perceptions and conceptions do not exist in an insulated state; the adjustments by which they are affected are so linked and associated by retransmissions that they reciprocally call up each other. This *linked association of adjustments* he took to be the machinery by which the *association of our ideas* is effected, and that *the propensity of our structure to these functional adjustments* constituted all we had of *ideas* which had been denominated *innate*; and he considered that this reciprocating perception from different sources of sensation (as the eye and ear) gave birth to the ideal theory of "species, images of forms and colour of things without their matter" of the old metaphysicians. In conclusion, the author contended that Mr. Hume's opinion on the non-existence of the idea of power, and of cause and effect, (except as antecedent and consequent), and the arguments and facts adduced against that opinion, receive an elucidation from the consideration of the modes of action of the muscular sense, of which both Mr. Hume and his adversary were quite ignorant.

The Secretary read a paper, by Dr. Searle, 'On the Cause of the Blood's Circulation through the Liver.'—After alluding to the powers which circulate the blood in the system generally, the author declared it to be still a problem by what combined forces the portal circulation was carried on in the liver,—one cause of the general circulation being apparently absent, namely, the oxygenation of the blood in the arterial system, in the blood the portal system being deemed wholly venous. The solution of the problem depended, he thought, on the fact that the stomach and bowels were (like the cutaneous) a respiratory surface, by which the portal blood becomes oxygenated to the necessary degree. In support of this view he adduced the experiments of Majendie, who found 11 per cent. of oxygen in the stomach of criminals examined after decapitation, and carbonic acid and nitrogen in the intestines; the source of this oxygen he believes to be the air swallowed with the food and saliva, and in combination with cold water. This oxygen he believes to be absorbed by the veins and lacteals, and communicated as a source of power to the portal vessels. He deemed the absorbing power of the gastric and mesenteric veins to be increased by the diminution of the quantity of blood in the vessels by the secretion of bile. In conclusion, he thought the ruminant animals required an additional supply of oxygen to maintain the respiratory function over their large gastro-intestinal surface, and that this

was supplied from their peculiar function of rumination.

FRIDAY.

Prof. OWEN in the chair.

Dr. H. BENNET read a paper 'On a peculiar form of Ulceration of the Cervix Uteri,' which was of purely practical interest.

A paper, by Prof. RETZIUS, 'On the Ethnological Distribution of round and elongated Crania,' was read.—On this paper a lengthened discussion arose on the degree to which physical peculiarities of races may become modified by climate, education, progress of civilization, and the effect of dwelling with higher races. Mr. LYELL gave it as the result of his recent observations in the Southern States of America, that the Negro race is much altered by living even for a few generations with the white races, and always for the better, even when no mixture of races exists; and that where it does exist, the result is ever to retain and propagate the higher developements of the white races.

Dr. CARPENTER read a paper 'On the Physiology of the Encephalon.'—The object of this communication was to bring under consideration the inferences to which we are led by the study of Comparative Anatomy, in regard to the functions of different parts of the human encephalon. He first pointed out that our comparisons need not be restricted to vertebrated animals, since the ganglionic centres of invertebrata may be shown to be analagous with certain portions of the cerebro-spinal system of the vertebrata. He stated it to be a universal fact, that all organs of special sense have distinct ganglionic centres, which must be regarded as the instruments of their respective sensations and as the sources of motions directly connected with those sensations; and that the whole cephalic mass of invertebrated animals was composed of a collection of such ganglia, without any vestige (except in the highest) of cerebrum or cerebellum. These organs make their first appearance in fishes; and bear at first but a small proportion to the chain of sensory ganglia, which forms the anterior termination of the spinal cord. In fishes we find distinct olfactive, optic and auditory nervous ganglia, together with thalami, optici and corpora striata, the degree of developement of which has no reference to that of the cerebrum; in fact, the bodies usually called the cerebral lobes of fishes are (except in the sharks, &c. which have the vestige of cerebral hemispheres) entirely composed of the analogues of the corpora striata. Hence Dr. Carpenter considered that these bodies, instead of being appendages to the cerebrum, really belong to the group of sensorial ganglia, and are to be regarded as altogether making up the ganglionic centres of common or tactile sensation, and of the movements prompted or directed by it. This chain of ganglia, although comparatively small in man, with reference to the bulk of the cerebral hemispheres, still exists in him, and must be regarded as the instrument of the same operations as those to which it ministers in the lower animals. Arguing from actions in the latter, and analogous phenomena in man in health and in disease, the author attributes to the sensory ganglia the formation of sensations, and the origination of respondent movements, which may be distinguished as *consensual*. To this category the purely instinctive actions of the lower animals, which seem executed without any *idea* of purpose, and in simple respondence to the promptings of sensation, appear referrible, together with a variety of actions in man, such as that of yawning, from the sight or sound of the act in another. Dr. Carpenter hence endeavoured to show that we must regard the cerebrum as the instrument of the formation of ideas, of the memory of ideas and sensations, and of the intellectual processes founded upon them, which terminate in an act of the will; and he pointed out that *ideas* may produce the same effect on muscular movement as sensations themselves, as when the suggestion of the idea of yawning induces the action. He also showed how the anatomical connexions of the cerebrum with the sensory ganglia would cause its communicating fibres to exert an influence on the latter, corresponding with that which is effected by the sensations directly received from the organs of sense. With respect to the *emotions*, he endeavoured to show that they may be regarded as compound states resulting from the simple feelings of pleasure and pain associated with certain ideas, or classes of ideas:—the feelings of pleasure or pain he would locate, with the sensations which commonly excite them, in the sensorial ganglia; whilst the formation of the ideas, which are essential parts of the emotions and propensities, is clearly a cerebral operation;—and he showed, in conclusion, how this view of the functions of the principal parts of the encephalon harmonizes with the known duplex action of the emotions,—first in producing involuntary movements, and second in stimulating and influencing the reasoning processes.

A lengthened discussion followed, in which Dr. LAYCOCK denied that we had yet a sufficient number of facts ascertained either to deny the higher mental processes and emotions to the lower animals, or to induce consent to the physiological distinctions drawn by Dr. Carpenter from the anatomical structures in man and mammalia. He defended his dissent by facts in natural history, and physiological and anatomical views relative to the encephalon published by himself, two years ago, in papers read before the Association.

The Section adjourned until Tuesday, the 15th.

THURSDAY.

SUB-SECTION E.—ETHNOLOGY.

President—Dr. PRICHARD.
Vice-Presidents—Admiral Sir C. MALCOLM, Dr. R. G. LATHAM, Dr. HODGKIN.
Secretary—Dr. KING.
Committee—M. Rugendas, Messrs. W. Ogilby, J. B. Jukes, Dr. Beke, Dr. A. T. Thomson, Messrs. F. Lloyd, W. H. Lloyd, Sir J. Clark, Dr. Twining.

Dr. R. G. LATHAM in the chair.

The SECRETARY read a paper, by Mr. W. BOLLAERT, 'On the Comanche Indians.'—These the author stated to be a Texian tribe of native Indians, who were divided into three divisions:—1. The Comanche or Zetans. 2. The Lembrack. 3. The Tenukes. They constituted the largest native tribe in Texas, they possessed few traditions, and were unacquainted with agriculture; consequently their habits were migratory. During war, they acknowledged one chief; they had an idea of a future state, but of a very gross nature, believing in the existence of evil spirits and witchcraft. The author, in conclusion, gave some remarks on their mode of conducting war and on their treaties.

Dr. LATHAM communicated a paper, by the same author, 'On the Indians of Texas.'—This consisted of an enumeration of the distinct tribes which were now, or had been, known in Texas. They formed a catalogue of thirty-five tribes. Some of these were derived from the Comanches—others were either wholly or nearly extinct. The manners of a few of the most considerable were alluded to.

Dr. LATHAM read a paper containing 'Remarks on a Comanche Vocabulary.'—After a careful examination of the vocabulary with that of other tribes, the author came to the conclusion, that the evidence of language determined the special affinities of the Comanche tribes to be with the Snake or Shoshonie Indians.

SECTION F.—STATISTICS.

President—Mr. G. R. PORTER.
Vice-Presidents—Sir C. LEMON, Col. SYKES, Messrs. HEYWOOD, E. NIGHTINGALE.
Secretaries—Messrs. W. COOKE TAYLOR, J. FLETCHER, F. G. P. NEISON, Rev. T. L. SHAPCOTT.
Committee—The Mayor of Southampton, Messrs. W. Duckworth, H. Hallam, M. Phillips, M.P., M. Ricardo, J. C. Sharpe, J. Shuttleworth, T. Tooke, G. S. Kenrick, Dr. King, Mr. M. Milnes, M.P., Capt. Allen, Rev. Prof. Elton.

The first paper read (by Dr. C. TAYLOR) was a 'Report on the Medical Relief to the Parochial Poor of Scotland under the Old Poor Law,' by Dr. AALISON.—It stated that as the objections made by Dr. Chalmers and others to establishing a legal and adequate provision for the poor in Scotland did not apply to medical relief, the efficiency of that relief, under the old Scottish law, would be a fair test of the efficacy of the voluntary system of charity. An association of medical practitioners was formed at Edinburgh, in November 1845, to collect information on the subject. It appeared that in Edinburgh there was no provision for medical relief from the poor-funds, except for the indoor paupers in the Charity workhouse. Previous to 1815 no assistance was ever given to the sick poor at home; and though since that period the duty has been gratuitously undertaken by the officers of several dispensaries, it had not been effectually or regularly performed. In the Canongate, the dispensary aid to the poor came to a sudden close in the midst of the late epidemic fever, in consequence of the death of one of the medical officers who had acted as treasurer. By the recent Act ten duly qualified and paid officers have been appointed to take charge of the sick paupers in the different districts; but Dr. Alison lamented that the provision had been abandoned which compelled the parishes to *combine* in giving relief, as in Edinburgh the rich congregate at one extremity of the city and the poor at the other. In Glasgow relief has been given by paid medical attendants for some years. Returns were obtained from 40 towns, exclusive of Edinburgh and Glasgow;—from which it appeared that in 16 of these towns there was absolutely no *requited* medical relief, either from the public authorities or from voluntary subscriptions. In 4, an occasional payment, never exceeding a few shillings, had been made on special occasions. In Campbelltown 10*l.* was allowed to the professional men during the epidemic fever. In Kirkintilloch a similar sum was given, but by a private individual. In Dundee during the same fever 5*l.* each was allowed to six dispensary surgeons. In some other places 2*l.* was given to a surgeon; and in others a small allowance was made for drugs. In anticipation of the new Poor Law, 10*l.* has been allowed annually for medical relief in Alloa. In Dunbar 6*l.* 6*s.*, but this includes the supply of drugs. In Dunfermline 20*l.* a year, not including drugs. In Greenock 25*l.* per annum has been paid to each of three district surgeons. In Kilmarnock 10*l.* each to three surgeons. In Week 15*l.* is divided between two surgeons. In Dumfries 10*l.* to one surgeon. The unrequited medical labour is stated by twenty-five gentlemen, and ranges from 5*l.* to 220*l.* annually in value, giving an average of 40*l.* per year. But this is not the only tax levied on the charitable feelings of medical men;—in 90 per cent. of the cases they had to furnish wine, food, &c., out of their own substance; and in 33 of the 40 towns brought under review, no change has been made in this system. Passing over the returns of infirmaries and dispensaries supported by voluntary contributions as rather imperfect, we come to the medical relief in the rural districts. The number of returns made amounts to 325. Out of these, 94 have received some remuneration, but only 39 annually. Of these 39 only 13 have received sums above 5*l.*; 26 above 1*l.* and less than 5*l.*; and 9 1*l.* or under. 10 are paid by the bounty of private individuals; and of these 1 is paid 60*l.* by a nobleman, and another 40*l.* by a landed proprietor; both, however, have the charge of extensive districts, and as there is no fund on which they can draw for drugs or necessaries there are large drawbacks to be made from the remuneration. 23 have received gratuities for their services, chiefly during the prevalence of epidemics. In one case this gratuity amounted to 20*l.*, in 14 it was under 5*l.*, in 2 cases it was only three shillings. In one of these cases this three shillings was the only remuneration for twelve years' attendance on paupers averaging 70 constant and 13 occasional patients: in the other, the three shillings was a remuneration for passing paupers of other parishes, and *nothing was allowed for twenty-one years of attendance on resident paupers*, averaging 44 constant on the district roll. 211, or above 60 per cent., have never received any remuneration of any kind for their professional attendance on the parochial poor, or for the drugs which they have deemed it necessary to supply to them; and 208 add that they have had occasion to give wine, food, &c. from their own limited funds, and that they had occasion to defray all travelling expenses when they made distant visits. 136 have estimated the money value of the unrequited labour which they have bestowed on the parochial poor:—it amounts to 34,447*l.* annually, or an average of 283*l.* each. The complaints of inattention to sick paupers by the parochial authorities are all but universal; and when applications were made for the repayment of different outlays, they were almost invariably refused. It was stated that since the abstract presented to the British Association had been compiled, several additional returns had been obtained; but they in no degree tend to weaken the general impression likely to be produced by the preceding statement, and it was therefore deemed unnecessary to tabulate them.

A brief conversation arose on the amount of benevolent sacrifice made by the medical profession generally; and hopes were expressed that the evils

exposed by Dr. Alison would disappear under a better administration of the new Poor Law.

The next paper was 'A Review of the Mines and Mining Industry of Belgium,' by R. Valpy, Esq. of the Board of Trade.—It stated that, as a coal-producing country, Belgium ranked the second in Europe. The ratio of the coal district to the total area is

	Acres.		Tons annually.
Great Britain $\frac{1}{20}$, or	2,930,000	producing	34,000,000
Belgium ....$\frac{1}{23}$, or	335,000	„	4,500,000
France ....$\frac{1}{215}$, or	630,000	„	3,783,000
Germanic Union.....			3,000,000

In 1838 the total number of coal-mines in Belgium was 307, with 470 pits in work and 172 in process of construction, employing 37,171 persons; being an increase of 8,454, or 28 per cent. on the number employed in 1829. The increase of the quantity of coal raised was not accurately ascertained, but it appeared to be about 37 per cent. The average cost of production is 10*s.* 8*d.* per ton, and the average price 23*s.* 1*d.* for first quality, and 16*s.* 6½*d.* for the second quality of coal; the average rate of wages is 1*s.* 6$\frac{9}{10}$*d.* per day. The establishments for preparing other mineral productions for market in 1838 were, for iron 221, copper 8, zinc 7, lead 2; the total number of furnaces was 139, of which 47 used coke and 92 charcoal. The total number of accidents from 1821 to 1840 was 1,352, which occasioned severe hurts to 882, and deaths to 1,710, making a total of 2,592 sufferers.

No discussion arose on this paper.

It was resolved that Dr. C. Taylor should be added to the Secretaries of this Section, and Mr. Kenrick to the Committee.

FRIDAY.

A Railway Map of England with an Explanation, contributed by Mr. Beaumont, was laid before the Section.—but the explanation was so indefinite that it was difficult to discover what were the author's objects, and in his absence it was found impossible to discuss the subject beneficially.

Mr. Heywood read a paper 'On the Educational Statistics of Oxford.'—He described the almost exclusive attention paid to classical studies and the neglect of mathematical and physical pursuits. But he particularly directed attention to the results of the examination called the "Great Go," with which a theological examination is connected at Oxford, including not merely the historical books of the Bible, but also an accurate knowledge of the thirty-nine articles and of the texts usually quoted in proof of their several propositions. Some criterion of the working of the system may be found in the number of unsuccessful candidates. The annual average of candidates for degrees is 410—of whom only 284 pass, while 126 are rejected. Thus about one-third are unsuccessful, after having kept fifteen terms, which require a residence of three years and a half. In this examination Aristotle appears to be the favourite author at Oxford; and the examiners appear to pride themselves in selecting the most difficult and abstruse portions of his rhetorical and ethical works, looking rather to the difficulties of grammar and philology than to their ethical value. Science is the technical term at Oxford for moral philosophy, and each separate treatise is called a science;—thus a student who has read Aristotle's Ethics and Rhetoric, a Dialogue of Plato and Butler's Analogy, is said to have got up four sciences. Aldritch's Compendium and Aristotle's Organon are the chief authorities in logic, and a power of commenting upon them can only be acquired by a long and painful course of minute study. Mr. Heywood's object was to call attention to the neglect of the mathematical and physical sciences, and to the great proportion of persons rejected or plucked at the final examination, and contended that these evils were avoided by the system pursued at Cambridge.

Dr. C. Taylor, at the request of the President, stated the system pursued in the Dublin University, dwelling particularly on the system of examination at the end of every term, and the strictness of the entrance examination by which emulation is created in classical schools. He also stated that at these examinations classical and scientific attainments were equally required, and that the scientific course included mathematics and physics, logic, and mental philosophy, and a very efficient course of moral philosophy. As deficiency is early discovered by failure at terminal examinations, he stated that the evil of rejection after long residence was almost unknown in Dublin.

Dr. C. Taylor was again requested by the President to give some account of the University system of France. He stated that under the term "University" was included the whole National Education of France; and the points on which he dwelt was the great attention paid to design in all the schools; the introduction of standard French authors into the course of polite literature on the same rank as the ancient classics; the introduction of an extensive course of ancient and modern history as a necessary part of the collegiate curriculum; and the establishment of a distinct course for young men designed for mercantile pursuits, or for professions not requiring an extensive knowledge of the ancient authors.

The Rev. Prof. Elton then, at the request of the Chairman, gave an account of the condition of academic education in the United States of America. He stated that the system of terminal examinations was similar to that of Dublin; but that the courses were more extensive and the examinations more severe in the New England Colleges than in those of the Southern States. He dwelt at some length on the advantages which had resulted from separating the colleges from the theological seminaries, and stated that in most of the latter previous graduation in a college was a necessary condition of admission. With respect to rejection, he considered it to be a great advantage in the Dublin and New England system, that literary deficiency could be detected at so early a stage by terminal examinations as to give young men an opportunity of choosing some other pursuit without further loss of time.

In reply to a question from Mr. Heywood, Prof. Elton reported that the experiment tried at Harvard University of allowing young men the option, at the end of the first year, of pursuing the study of modern, instead of ancient, languages had not been found to work well, and was likely to be abandoned.

Mr. M. Philips called attention to the neglect of living oriental languages in England, such as Chinese, Turkish, Malay, &c., and trusted that some means would be devised for facilitating the study and encouraging young men to the pursuit. There was not at this moment, a professor of Chinese or Turkish in any English collegiate establishment.

Some reference having been made to the Arabic, Sanscrit, and Hebrew professorships, Col. Sykes pointed out the difference between the dead classical languages of Asia and the living languages. We had professors of the former, as of other branches of learned lore, but we had none for the latter, which were practically the most important to a commercial nation.—Mr. M. Philips said that as many Manchester gentlemen were present who felt a deep interest in the subject, he should feel obliged if Dr. C. Taylor would explain how drawing and design formed so large a part of instruction in France.—Dr. C. Taylor said that the French instructional authorities regarded drawing as valuable, not merely for itself but for the habits of observation which it formed. The simplicity of the decimal system of coins, weights and measures, enabled French children to learn arithmetic in less than half the time which was required to master our barbarous divisions of money, weight and measure. He was no believer in the natural artistic superiority of the French,—the comparison between the recent exhibitions of the National Gallery and the Louvre established the decided pre-eminence of the English school; but in France the operatives were instructed in design as well as the artists, and were able to make such alterations and adjustments of patterns, as the exigencies of the machinery with which they had to work required,—an advantage at present wanting in England.

Mr. Heywood re-called attention to the subject of Oxford Education, by adverting to the terminal examinations in the class-rooms, but stated that these were voluntary, and therefore, not so efficacious as those of Ireland and America.

In consequence of the absence of Dr. Laycock, who was to have read a paper 'On the Statistics of York,' the Section adjourned.

SATURDAY.

The Secretary read a paper, from Mr. Wigglesworth, 'On the Mortality of Children,' and expressed his regret that the absence of the author must prevent both himself and others from receiving explanations on some portions of the paper which seemed rather doubtful and obscure. It appeared that returns had been collected from 1987 families, in which the number of children was 10,076, giving an average of more than 5 in a family. The number of males was 5,091 and of females 4,985 which gives a proportion of 51 to 50. From these he constructed a table, showing the number out of which one child would die in one year according to the experience of families.

Age.	Males and Females.	Males.	Females.
1	9·62	8·34	11·00
2	16·88	17·01	16·75
3	32·38	31·00	33·63
4	47·14	49·32	45·25
5	65·51	67·21	63·94
6	90·38	108·85	72·59
7	95·83	83·21	112·48
8	143·14	120·52	174·00
9	137·80	124·53	153·36
10	281·63	369·67	228·00
11	155·93	160·16	152·00
12	196·05	193·20	199·70
13	279·38	356·20	231·57
14	195·88	271·16	154·12
15	153·70	165·33	144·12
16	200·14	123·63	430·67
17	171·67	176·57	167·57
18	190·25	158·43	242·00
19	162·15	166·67	158·28
20	158·00	101·67	327·00
21	121·43	136·67	108·50

Taking the case of males and females conjointly, it will be seen that there is a gradual decrease from the 1st to the 8th year, and that there is an increase over the previous year in the 9th, 11th, 14th, 15th, 17th, 19th, 20th, and 21st years.—In males these fluctuations take place in the 7th, 11th, 14th, 15th, 17th, 19th, and 21st years.—In females there is a general decrease to the 8th year, and an increase in the 9th, 11th, 14th, 15th, 17th and 21st year.—A table of diseases was then exhibited, from which it appeared that more males than females died of nervous diseases and from external causes; but that more females than males die of epidemic disease, and diseases of the respiratory organs.—These tables, from family returns, were then compared with similar tables constructed from the Statistics of the Foundling Hospital, and were found to agree very closely in their results.

The second paper read was 'On Plate Glass-making in England in 1846, contrasted with what it was in 1827,' by Mr. H. Howard.—The writer furnished carefully all the materials for establishing this comparison. Amongst other results he stated, that in 1827 plate glass was sold for about 12*s.* average per foot, to the extent of about 5,000 feet per week; in 1835, for from 8*s.* to 9*s.* per foot, to the extent of about 7,000 feet; in 1844, for from 6*s.* to 7*s.* per foot reaching about 23,000 feet; and in 1846, for from 5*s.* to 6*s.*,—about 40,000 feet per week. The sale is now about 45,000 feet weekly. He mentioned that, in 1829, a plate glass manufactory ceased operations because of the small profit realized when selling at 12*s.*; while, in 1846, a company, with a paid-up capital of 130,000*l.*, realized a net profit of 30,000*l.* selling at from 5*s.* to 6*s.* Looking at this extraordinary increase, in spite of the severity of excise restrictions, the author asks, what would be the probable demand if the price were reduced to 4*s.* or 3*s.* 6*d.* per foot—which, free as the trade now is from excise interference, would yield an ample profit?

Col. Sykes then read a supplement to an elaborate account 'Of the Civil and Criminal Statistics,' illustrating the administration of justice in the four Presidencies of India, which he had read to the Statistical Society of London, March 20th, 1843. The tables he presented were very voluminous, and entered into the most minute details. As it would be unnecessary to publish them at full length, and, indeed, scarcely possible to do so within reasonable limits, we shall merely state the results. The extended powers given to native judges and magistrates have produced very beneficial effects. The appeals from their decisions in civil cases are so few, as to show that their propriety is generally recognized; and their diligence is proved by the small amount of causes in arrear,—an amount which is annually decreasing. In all the Presidencies except Madras, an appeal is allowed in

criminal cases; and though the number of sentences reversed is but small, yet even these few show the value of having the power of revision in the awarding of punishment.

The Secretary read a Report 'On the Statistics of Sickness and Mortality in the City of York,' furnished by Dr. Laycock. The report stated that it was desirable to have a more perfect system of registration; and recommended that the hour of decease, the length of residence in the place of death and in the locality previously occupied, and the state of the surviving family, should be recorded.

FRIDAY.

SECTION G.—MECHANICS.

President—Rev. Prof. Willis.

Vice-Presidents—Rev. Dr. Robinson, Messrs. G. Rennie, J. Scott Russell, W. Snow Harris.

Secretaries—Messrs. C. Manby, W. Betts, jun.

Committee—Messrs. J. Taylor, J. Walker, R. Stephenson, J. Locke, I. K. Brunel, C. Vignolles, W. Fairbairn, E. Hodgkinson, E. W. Dent, W. Chatfield, J. Whitworth, J. Nasmyth, J. G. Bodmer, J. Fincham, R. C. Grantham, T. Hoblyn, Dr. Phipps, M. Ricardo, H. R. Roberts, Sir J. Guest, Messrs. Grant, Brockedon, C. H. Gregory, W. Harding.

The proceedings of this Section did not commence till to-day, when the chair was taken by Mr. Scott Russell.

Dr. Robinson gave an account of a 'Modification of Dr. Whewell's Anemometer,' for measuring the velocity of the wind.—He explained to the section verbally the nature of the various anemometers hitherto employed to measure the *force* of the wind, and distinguished Whewell's from them, as a means merely of comparative *rate*. The fault of it was, that the instrument gave no absolute measure of velocity in miles per hour, and that it reduced the rates to no standard, and therefore the observations made at one observatory were not capable of comparison with those at another. He had applied an observation of Mr. Edgeworth, who was a family connexion of his own, to the construction of such an addition as would render Whewell's anemometer more perfect in this respect. He mounted on a vertical axis three or four arms, carrying hemispherical cups at their extremities. These cups opposed much less resistance to air acting on the concave sides than on their convexities, and in such ratio that uniform revolution was produced at the rate of *one-third* of the velocity of the wind. From this measure, which would be the same for all sizes of the instrument, and at all places, the mean velocity of the wind during a given period could always be obtained in miles per hour. He concluded by reading some of the determinations of his own instrument at the observatory at Armagh.

The Chairman in giving the thanks of the Section to Dr. Robinson, expressed their sense of the scientific elegance and great practical value of an invention applicable generally to the measurement of velocity of fluids; and he called their attention to the dexterous logical process by which the one definite desired term had been eliminated from a multitude of unknown quantities, as exhibiting an admirable example of the combination of sound mathematical reasoning with sagacious experiment.

Mr. Vignolles read a paper furnished by M. Arago, for the purpose of being communicated to the Association, M. Arago himself being prevented by illness from attending.—'On a new method of Boring for Artesian Springs,' by M. Fauvelle, of Perpignan, in France. The paper was an abridged translation of M. Fauvelle's own account, in which he says:—"In 1833, I was present at the boring of an artesian well at Rivesaltes; the water was found, and spouted up abundantly. They proceeded to the tubing, and for that purpose enlarged the bore-hole from the top downwards. I was struck by observing that it was no longer necessary to draw the boring tools to get rid of the material, and that the water, rising from the bottom, brought up with it, in a state of solution, all the soil which the enlarging tools detached from the sides. I immediately observed to my friend, M. Bassal, who was with me—'This is a remarkable fact, and one very easy to imitate; if, through a hollow boring rod, water be sent down into the bore-hole as it is sunk, the water, in coming up again, must bring with it all the drilled particles.' On this principle I started to establish a new method of boring. The apparatus is composed of a hollow boring rod, formed of wrought iron tubes screwed end to end: the lower end of the hollow rod is armed with a perforating tool, suited to the character of the strata which have to be encountered. The diameter of the tool is larger than the diameter of the tubular rod, in order to form around it an annular space through which the water and the excavated material may rise up. The upper end of the hollow rod is connected with a force-pump by jointed or flexible tubes, which will follow the descending movement of the boring tube for an extent of some yards. This boring tube may be either worked by a rotatory movement with a turning handle, or by percussion with a jumper. The frame and tackle for lifting, lowering, and sustaining the boring tube, offer nothing particular. When the boring tube is to be worked the pump must be first put in motion. Through the interior of the tube a column of water is sent down to the bottom of the bore-holes, which water, rising in the annular space between the exterior of the hollow boring rod and the sides of the bore-hole, creates an ascending current which carries up the triturated soil: the boring tube is then worked like an ordinary boring rod; and as the material is acted upon by the tool at the lower end, it is immediately carried up to the top of the bore-hole by the ascending current of water. It is a consequence of this operation that the cuttings being constantly carried up by the water, there is no longer any occasion to draw up the boring tube to clear them away, making a very great saving of time. Another important and certainly no less advantage, is, that the boring tools never get clogged by the soil; they work constantly (without meeting obstructions) through the strata to be penetrated, thus getting rid at once of nine-tenths of the difficulties of boring. In addition, it should be mentioned, that experience has shown there are no slips in any ground which ordinary boring-rods can penetrate; that the boring tube works at 100 yards in depth with as much facility as when only 10 yards down, and that from the very circumstance of its being a hollow rod, it presents more resistance to torsion than a solid rod of equal thickness and quite as much resistance to traction: these are the principal advantages of the new system of boring. Indeed these advantages have been fully confirmed by the borings which I have just completed at Perpignan. This boring was commenced on the 1st July and was completed on the 23rd, by finding the artesian water at a depth of 170 mètres (560 English feet). If from these twenty-three days, each of ten hours' work, are deducted three Sundays and six lost days, there remain fourteen days or one hundred and forty hours of actual work; which is upwards of 1 mètre per hour, that is, ten times the work of an ordinary boring rod. In the method I have described, it will be perceived that the water is injected through the interior of the boring rod. Experience has taught me that when gravel, or stones of some size are likely to be met with, it is better to inject the water by the bore-hole, and let it rise through the boring tube. The additional velocity which may be thereby given to the water, and the greater accuracy of calibre of the tube, allow the free ascent of all substances which may be found at the bottom of the bore-hole, and which the former mode of working may not so readily accomplish. I have brought up by this latter way stones of 6 centimètres long and 3 thick (2¼ by 1¼ English inches). The idea of making the water remount through the interior of the boring tube suggests an easy mode of boring below a film (sheet) of flowing water: it would be sufficient to close the orifice of the bore-hole hermetically, still, however, so as to allow the boring tube to work, but yet so that the flowing water should be always forced down to the bottom of the bore-hole to find its way to a vent: it would thus draw up and carry away all the detritus. If, in addition to the above, we consider the possibility of making the hollow stem of the boring rod of wood, and of balancing it so that it would weigh no more than the water in which it has to move, the problem of boring to depths of 1,000 mètres (1,100 yards) and upwards would appear to be solved. In the square of St. Dominique, at Perpignan, a boring had been carried on upon the old method for upwards of eleven months for the purpose of forming an artesian well, and the water had not been found." Fauvelle placed his new tube alongside the old boring tackle, and soon got down to a depth of nearly 100 yards, when an accident occurred which would have required some days to remedy. Fauvelle decided upon abandoning the bore-hole already sunk so deep, and commencing a new one, satisfied that there would thereby be a saving in time. The rate of sinking was equal to four English feet per hour of the time the hollow boring rod was actually at work, the depth of 560 English feet having been obtained in 140 working hours, for a bore-hole of about six English inches in diameter. M. Arago, who had seen the rods of Fauvelle at work, mentions how fully they answered, and that the large powerful tools at the bottom of the hollow boring rod cut easily through the hardest strata; he confirmed the fact of the large sized stones and gravel coming up with the ascending current, having himself watched them. He also mentioned, that such was the opinion of the people in the vicinity of Perpignan, and so much was water wanted, that orders for the sinking upwards of 200 artesian wells had been given to Fauvelle. The introduction of this system into this country, especially if combined with the Chinese or percussive system of boring, as practised with bore-holes of very large diameter, at the Saarbruck mines, and at many other places on the Continent, must be productive of great benefit, and would not merely effect a saving of money and labour, but the paramount advantage of immediately solving the question of the existence of coal, minerals, water, &c.

Sir John Guest asked Mr. Vignolles to explain the system of percussion boring, for the information of those gentlemen present who might not be acquainted with it.—Mr. Vignolles said, instead of boring with augers or rods, there was a heavy weight suspended by a rope and pulley; and fixed to the bottom of the weight was a tool of the crown form, viz., a circular tool of iron, indentated at the bottom. There was no description of rock on which he had tried it that this tool did not penetrate with facility. The prejudice of English workmen, however, had hitherto prevented its introduction in this country; but he had no doubt it would make its way, particularly if it could be combined with Fauvelle's system.—J. Lobb, Esq., Mayor of Southampton, wished to ask a question relative to the applicability of Fauvelle's plan to the boring of the Southampton artesian well. They had got to the depth of 1,200 feet with a bore 6 inches in diameter, and the expense had been nearly 20,000*l.*; this system, however, seemed to diminish the expense of boring in an extraordinary manner; and he wished to ask if it could be applied to the present boring at the Southampton Common?—Mr. Vignolles, as an engineer, had no hesitation whatever in saying that it could be applied without difficulty. If they wanted force to send the water down the tube, they might use a steam-engine.—Dr. Robinson suggested that a deputation from the Section should go to the works of the Southampton well, and inspect them.—Mr. J. Hill said that percussion had long been used in this country. They had used that plan whenever they came to hard substances in the Southampton boring. The rods were drawn up by a windlass, and dropped down a foot or six inches; and after the material was loosened the rods were drawn, and the pulverized material raised up by a cylinder.—Mr. Vignolles said this was different from the Chinese system of percussion, where a rope was used, which saved the trouble and loss of time in drawing the rods. The power required for sending down the water on Fauvelle's plan was much less than might be supposed.—The Marquis of Northampton suggested that a committee of the Geological Section should be invited to accompany the committee from this Section.—Dr. Lankester expressed his warm approval of Mr. Fauvelle's plan, and his opinion of its applicability.—A conversation followed, in the course of which Sir John Guest said the weight of a hollow rod, three inches in diameter, and the iron a quarter of an inch thick, would be less than that of a solid rod of an inch diameter: the weight would be further lessened by the rod floating in water.—The Section then adjourned to Monday.

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